CURRENT MANAGEMENT SITUATION

OF

SPECIAL STATUS SPECIES

IN THE

WEST MOJAVE PLANNING AREA

West Mojave Planning Team
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CONTENTS

TABLES

ACRONYMS & ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
AUM	Animal Unit Month
BLM	Bureau of Land Management
CalTrans	California Department of Transportation
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CE	California Department of Fish and Game Conservation Easement
CMS	Current Management Situation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNPS	California Native Plant Society
DOD	Department of Defense
DTNA	Desert Tortoise Natural Area
DWMA	Desert Wildlife Management Areas
ER	California Department of Fish and Game Ecological Reserve
ERA	Inyo County Environmental Resource Areas
FESA	Federal Endangered Species Act
FLPMA	Federal Land Policy and Management Act
JTNP	Joshua Tree National Park
HCP	Habitat Conservation Plan
INRMP	Integrated Natural Resource Management Plan
MUC	Multiple Use Class
NEPA	National Environmental Policy Act
NPS	National Park Service
OHV	Off-highway Vehicle
SEA	Los Angeles County Significant Ecological Area
SLC	State Lands Commission
SMARA	Surface Mining and Reclamation Act
USBIA	U.S. Bureau of Indian Affairs
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WA	California Department of Fish and Game Wildlife Area
WMPA	West Mojave Planning Area
WSA	Wilderness Study Area

CHAPTER I
INTRODUCTION

GOALS AND OBJECTIVES

The West Mojave Coordinated Management Plan (West Mojave Plan) will present a comprehensive interagency program for the conservation of biological resources. The West Mojave Plan will serve as a regional Habitat Conservation Plan (HCP) to meet the requirements of the federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Twenty-eight agencies having administrative responsibility or regulatory authority over species of concern within the planning area are jointly preparing the West Mojave Plan, including 11 incorporated cities and towns, 4 counties, 1 water district, 4 departments of the State of California, 3 agencies of the Federal Department of the Interior, and 5 military installations (participating agencies). The participating agencies are cooperating with a variety of organizations that have a stake in the future management of the planning area to develop the West Mojave Plan. Collectively, these agencies and organizations are referred to as the "Supergroup."

The need for the West Mojave Plan was first stated in the 1992 *Memorandum of Understanding By and Between the U. S. Bureau of Land Management and the Undersigned Participating Agencies*. That document identified the following "Purposes of the Plan":

1. Protection of Species of Concern: To conserve and protect species of concern and the ecosystems on which they depend within the western Mojave Desert.

2. Provide Equity in Regulation: To provide a comprehensive means to coordinate and standardize mitigation and compensation requirements so that public and private actions will be regulated equally and consistently, reducing delays, expenses, and regulatory duplication. It is intended that the Plan will eliminate uncertainty in developing private projects and will prescribe a system to ensure that the costs of compensation/mitigation are applied equitably to all agencies and parties.

3. Reduce Cumulative Impacts: To prescribe mitigation measures for private development and agency actions to lessen or avoid cumulative impacts to the species of concern and eliminate, whenever possible, case-by-case review of impacts of projects when consistent with the mitigation and compensation requirements prescribed by the Plan. [*Memorandum of Understanding By and Between the U. S. Bureau of Land Management and the Undersigned Participating Agencies*, page 2.]

On September 10, 1997, the Supergroup adopted Equitable Precepts which are intended to guide the preparation of the West Mojave Plan. These included a Mission Statement and seven Principles, which are set forth below:

Mission Statement

The West Mojave Plan [ ] will provide an improved and streamlined process which minimizes the need for individual consultations with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) while providing better science for species conservation.

The [West Mojave] Plan will allow projects to be approved and signed-off rapidly. Project proponents will know the mitigation measures that will be required of them before the project is presented to the local government or, in the case of public land, presented to the state or federal agency.

Principles

1. The ultimate goal of the [West Mojave] Plan will be based on specified measures to enable project proponents to comply with the requirements of CESA and FESA.

2. The [West Mojave] Plan will be equitable, predictable and compatible with local, state and federal agency permitting procedures so as to be easily administered.

3. The mitigation strategy will be responsive to the needs and unique characteristics of the many diverse industries and activities in the program area on both public and private land while allowing compatible economic growth.

4. Project proponents shall have a choice of utilizing the conservation program or working directly with the CDFG or USFWS to address endangered species act compliance.

5. The [West Mojave] Plan will incorporate realistic fiscal considerations, with identified sources, i.e. federal, state, local, public and private.

6. The [West Mojave] Plan will ensure that no one group of desert users will be singled out to disproportionately bear the burden of the [West Mojave] Plan implementation.

7. The [West Mojave] Plan will have the flexibility to respond to future legislative, regulatory and judicial requirements.

The West Mojave Plan will be consistent with the objectives of the *Desert Tortoise (Mojave Population) Recovery Plan* (Recovery Plan), prepared in 1994 in response to the 1990 listing of the desert tortoise as threatened by the USFWS.

This *Current Management Situation of Special Status Species in the West Mojave Planning Area*

(CMS) identifies existing policies and management actions which affect each of 98 special status species in the West Mojave planning area (WMPA). Special status species are defined as the following:

(1) Listed as threatened or endangered (state and federal);
(2) Proposed for listing;
(3) Candidates for listing (state and federal);
(4) California species of concern;
(5) Bureau of Land Management (BLM) sensitive species; and,
(6) Plants identified by the California Native Plant Society as rare, threatened, endangered, or of limited distribution in California.

The CMS is organized by species. To determine whether a participating agency's plan or program affects a particular species, the planning team utilized a variety of sources including personal communications with regional experts, land use plans, zoning ordinances, county and municipal codes, project or area specific biological surveys and other information in the West Mojave planning team's biological data base. Narratives for cities and counties pertain only to privately-owned lands, and to lands owned by the city or county (such as parks).

The narrative identifies commitments made by a participating agency to manage lands for a special status species. This can be evidenced by management prescriptions or objectives which are applicable to a particular parcel of land and which provide additional protection for a species or its habitat. Appendix D provides more detailed information on areas committed to the conservation of special status species in the WMPA.

DESCRIPTION OF THE PLANNING AREA

The planning area encompasses approximately 9,359,000 acres and extends from Olancha in Inyo County on the north to the San Gabriel and San Bernardino Mountains on the south, and from the Antelope Valley on the west to Twentynine Palms on the east (See Map 1). Table 1 lists the approximate acreage falling within a jurisdiction; however, not all of these lands may be the administrative responsibility of the jurisdiction (for example, county acreage includes lands under the jurisdiction of cities, and of the state and federal government). The acres given for the cities and towns do not include spheres of influence.

Map 1 West Mojave Planning Area

Table 1 Acres Within Participating Agencies

Jurisdiction	**Approximate Acres**
Adelanto	32,480
Apple Valley	46,930
Barstow	21,000
California City	130,420
Hesperia	42,650
Lancaster	60,590
Palmdale	63,440
Ridgecrest	12,240
Twentynine Palms	35,100
Victorville	42,990
Yucca Valley	24,860
Inyo County	831,230
Kern County	1,568,660
Los Angeles County	684,600
San Bernardino County	6,012,560
State Lands Commission	97,145
State Department of Parks and Recreation (CDPR)	25,400
Fish and Game (CDFG)	14,550
Joshua Tree National Park (JTNP)	291,150
Bureau of Land Management	3,226,930
China Lake Naval Air Weapons Station	1,103,800
Fort Irwin National Training Center	634,590
Edwards Air Force Base	307,310
Marine Corps Logistics Base at Nebo/Yermo	6,310
Marine Corps Air Ground Combat Center at Twentynine Palms	590,520

The Indian Wells Valley Water District (IWVWD) covers an area of 38 miles, which is inclusive of lands within China Lake Naval Air Weapons Station, BLM, City of Ridgecrest and Kern County.

IWVWD is a utility with no land management authority and as such is unlike the other jurisdictions participating in this planning effort. This CMS does not address Riverside County; although, a small portion of the planning area is within Riverside County, this area consists solely of federal land under the jurisdiction of the National Park Service and the Bureau of Land Management. The following four tables list the approximate number of acres administered by each of the participating agencies and illustrate the pattern of land ownership within the WMPA broken down by county.

Table 2 Inyo County

Jurisdiction / Agency	**Approximate Acreage**
Total acreage of County within planning area	831,230
State Lands Commission	12,910
China Lake Naval Air Weapons Station	458,160
Bureau of Land Management	331,430
Inyo County (residual private lands)	28,260

Table 3 Kern County

Jurisdiction / Agency	**Approximate Acreage**
Total acreage of County within planning area	1,568,660
California City	130,420
Ridgecrest	12,240
State Lands Commission	2,670
State Parks	12,950
CDFG	640
Bureau of Land Management	516,160
China Lake Naval Air Weapons Station	70,600
Edwards Air Force Base	215,970
Kern County (residual private lands)	748,710

Table 4 San Bernardino County

Jurisdiction / Agency	**Approximate Acreage**
Total acreage of County within planning area	6,012,560
Adelanto	32,485
Apple Valley	46,930
Barstow	21,000
Hesperia	42,650
Twentynine Palms	35,100
Victorville	42,990
Yucca Valley	24,860
State Lands Commission	77,330
CDFG	13,910
Joshua Tree National Park	76,760
Bureau of Indian Affairs	166
Bureau of Land Management	2,329,870
China Lake Naval Air Weapons Station	574,980
Edwards Air Force Base	43,640
Fort Irwin National Training Center	634,590
Marine Corps Logistics Base at Nebo/Yermo	6,310
Marine Corps Air Ground Combat Center at Twentynine Palms	590,520
San Bernardino County (residual private lands)	1,667,320

Table 5 Los Angeles County

Jurisdiction / Agency	**Approximate Acreage**
Total acreage of County within planning area	684,600
Lancaster	60,590
Palmdale	63,440
State Lands Commission	40
State Parks	12,450
Bureau of Land Management	7,660
Edwards Air Force Base	47,700
Los Angeles County (residual private lands)	610,840

Table 6 presents a summary of land ownership within the planning area. The numbers given are

approximate. About 32% of the land in the planning area is in private ownership, 28% is military land managed by the Department of Defense for training and other purposes and 34% is public land managed by the Bureau of Land Management for multiple-use purposes.

Table 6 Land Ownership in Planning Area

Land Ownership	**Approximate Acres**	**Approximate %**
Private Landowners	3,056,800	32
State of California	137,095	>1
State Lands Commission	97,145	>1
Department of Parks and Recreation	25,400	<1
Department of Fish and Game	14,550	<1
Federal Government	6,160,776	65
Department of the Interior		
National Park Service	291,150	>3
Bureau of Indian Affairs	166	<1
Bureau of Land Management	3,226,930	34
Department of Defense	2,642,530	28
TOTAL	9,354,670	100

The planning area is characterized by a long-term trend of urban growth, particularly along the north slope of the San Gabriel and San Bernardino Mountains and downstream along the Mojave River to Barstow. Urban development has proceeded at a substantial pace in the Antelope, Indian Wells, Lucerne, Victor and Yucca Valleys (see Tables 7 and 8). Between 1980 and 1990 the human population of the planning area increased from 260,000 to 606,000. Although regional economic conditions led to slower growth in the early 1990s, the long term upward trend is expected to continue (Northwestern Economic Associates, 1994).

Table 7 Urban Population Trends 1980 - 1990

Development Area	Population		
	1980	1990	Annual % Increase*
South Inyo Co.	NA	2,554	NA
North LA Co.	83,753	231,337	10.7
Eastern Kern Co.	46,449	68,969	4.0
Barstow-Victorville Region	94,298	230,461	9.3
Red Mt. - Trona	5,180	14,446	10.8
Yucca Valley - 29 Palms Region	29,905	58,282	6.9
Total Planning Area	259,585	606,129	8.9

Source: US Census; Northwest Economic Associates

* The population growth rate within the urban areas has slowed considerably since the early 1990's. For example, the City of Hesperia is currently experiencing about a 1% rate for this decade, and is projecting a 3 % growth rate up to the year 2020.

Table 8 Total Urban Development in 1990 And 1994

Development Area	Total Urban Development (Acres)	
	1990	1994
South Inyo Co.	900	1,000
North LA Co.	42,500	53,800
Eastern Kern Co.	11,400	13,500
Barstow - Victorville Region	55,100	65,300
Red Mt. - Trona	34,000	3,700
Yucca Valley - 29 Palms Region	52,600	61,200
Total Planning Area	165,900	198,500

Source: Northwest Economic Associates

Note: Urban development includes residential, commercial, industrial, and institutional uses; and roads, highways and other infrastructure serving the communities.

In compliance with state and federal requirements, the urban and industrial development in the region has resulted in mitigation on site and compensation actions on and off-site. Relative to on-site mitigation and off-site compensation, the following definitions are derived from Measures Intended to Minimize and Mitigate the Take of Sensitive Species (U.S. Fish and Wildlife Service, 1996 - HCP Handbook):

•Minimize Take: Measures that will be implemented on-site to minimize impacts to the desert tortoise and other special-status species (e.g., fencing, biological monitors, reduced speed limit, education programs, etc.)

•Mitigate Take: Measures that will be implemented off-site to compensate for impacts to the desert tortoise and other special-status species (e.g., deed a specific amount of compensation land or equivalent monetary amount to a management group generally for impacts occurring to a species as a result of an authorized project, etc.)

See Appendix A for a discussion of lands which have already been committed to long-term species conservation (mostly desert tortoise) through project-related compensation and mitigation. These include land acquisition, and the establishment of conservation easements on privately-owned lands

CHAPTER II
LEGISLATED MANDATES AND GENERAL POLICIES

SIGNIFICANT STATUTES

California Endangered Species Act

The California Endangered Species Act (Cal. Fish & Game Code 2050 et seq.) is administered by CDFG as the trustee for fish and wildlife resources in the State of California. Through CESA, the Legislature found that certain species of fish, wildlife and plants are in danger of, or threatened with, extinction, and found that the "conservation, protection, and enhancement of these species and their habitat is of statewide concern." (Id. At 2052.) Therefore, CESA authorizes the California Fish and Game Commission to establish a list of endangered and threatened species (Id. At 2070), and states that "no person shall ... take ... any species ... that the commission determines to be an endangered species or a threatened species." (Id. At 2080.)

Section 2081(b) Incidental Take Permit: CESA authorizes CDFG to allow, by permit, the take of an endangered, threatened or candidate species. Such a permit may be issued only if the following permit issuance criteria are met:

> (1) The take is *incidental to an otherwise lawful activity*.
> (2) The impacts of the authorized take shall be *minimized and fully mitigated*. The measures required to meet this obligation shall be *roughly proportional* in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall *maintain the applicant's objectives to the greatest extent practicable*. All required measures shall be capable of successful implementation. For purposes of this section only, impacts of taking include all impacts on the species that result from any act that would cause the proposed taking.
> (3) The permit is consistent with any regulations adopted pursuant to Sections 2112 and 2114.
> (4) The applicant shall ensure *adequate funding* to implement the measures required by paragraph (2), and for monitoring compliance with, and effectiveness of, those measures. [Id. At 2081(b), emphasis added.]

CESA further requires that no "incidental take permit" may be issued if issuance of the permit would jeopardize the continued existence of the species, a determination which CDFG must make based on the best scientific and other information that is reasonably available. (Id. At 2081(c).) This must include consideration of the species' capability to survive and reproduce in light of known population trends, known threats to the species, and reasonably foreseeable impacts on the species from other related projects and activities. (Id.) Regulations governing the issuance of CESA incidental take permits were adopted on December 30, 1998; see Title 14, California Code of Regulations, beginning with Section 783.

Section 2090 Consultations: Prior to January 1, 1999, Section 2090 of CESA directed that lead agencies of the State of California consult with CDFG to ensure that any action which they authorized,

funded, or carried out would not be likely to jeopardize the continued existence of any endangered or threatened species. On that date, however, Section 2090 was repealed. Legislation to reinstate this requirement is currently pending.

Federal Endangered Species Act

The Congress specified that the purposes of the federal Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) "are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species..." (Id. At 1531 (b).) "All federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this chapter" (Id. At 1531(c)(1).)

FESA assigns to the Secretary of the Interior the responsibility for maintaining a list of threatened and endangered species and for designating critical habitat for these species (Id. At 1533 (FESA Section 4).) FESA section 3 defines critical habitat as follows:

> (i) the specific areas within the geographic area occupied by the species ... on which are found those physical and biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical areas occupied by the species ... essential for the conservation of the species [16 U.S.C. 1532(5)(A).]

It is unlawful for any person to "take" a federally-listed species. (Id. At 1538(a)(1)B.) The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect. (Id. At 1532(19).). Take includes significant habitat modification or degradation which actually kills or injures wildlife (*Babbitt v. Sweet Home Chapter*, 515 U.S. 687).

FESA also directs that "the Secretary shall develop and implement [recovery plans] for the conservation and survival of endangered species and threatened species..." (Id. At 1533(f)(1).)

Section 10(a)(1)(B) Incidental Take Permit: FESA provides exceptions to its prohibition on take of listed species. It allows USFWS to authorize, by permit, takings which are incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. (Id. At 1539(a)(1)(B), also and hereinafter referred to as FESA section 10(a)(1)(B).) Such "section 10(a)(1)(B) permits" may be issued if an applicant for a permit submits to USFWS a "conservation plan" (i.e. an HCP) that satisfies the following permit issuance criteria:

> (i) The taking will be incidental;
> (ii) The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
> (iii) The applicant will ensure that adequate funding for the plan will be provided;
> (iv) The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and,
> (v) The measures, if any, required under [1539(a)(2)(A), "such other measures that the Secretary may require as being necessary or appropriate"] will be met, and [the

> Secretary] has received such other assurances as he may require that the plan will be implemented.... [Id. At Section 10(a)(2)(B).]

It should be noted that these criteria do not explicitly require HCPs to contribute to the recovery of a listed species. Rather, HCPs are only required to ensure that the "likelihood of the survival and recovery of the species in the wild" will not be appreciably reduced. In addition to an HCP, the permit applicant prepares (1) an environmental assessment (EA) or environmental impact statement (EIS) which informs the public of the environmental effects of the authorized take, and (2) an 'Implementing Agreement' (IA) which obligates the involved parties to implement the measures of the HCP. A formal permit application will then be submitted to the USFWS, which will then prepare an inter-office biological opinion. The final step is the issuance of a Section 10(a)(1)(B) incidental take permit. In California for the desert tortoise, this process has taken 18 months for a 5-acre project in Yucca Valley and 3 years for a 160-acre site in Victorville. A primary objective of the West Mojave Plan is to avoid the time delays inherent in obtaining project-specific 10(a)(1)(B) permits.

Section 7 Consultation: A different procedure governs projects which are located on public lands under BLM or DOD jurisdiction, and projects "authorized, funded or carried out" by the federal government. FESA requires that federal agencies shall, "in consultation with and with the assistance of [USFWS] insure that any [such] action ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species..." (Id. At 1536, also and hereinafter "FESA Section 7.") The term "jeopardize" means to "engage in an action that would reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers or distribution of that species." (50 CFR 402.02.)

Accordingly, when a federal agency determines that a project may affect a threatened or endangered species, it "consults" with the USFWS. Consultation is initiated by the submission to USFWS of a biological assessment which is based on the best scientific and commercial data available. The biological assessment describes the project, its anticipated impacts, and proposed mitigation (including compensation, usually replacement habitat). In most cases, the project EA contains the information necessary to constitute a biological assessment. For major projects requiring the preparation of an EIS, a separate biological assessment may be prepared. Consultations normally must be concluded and a biological opinion rendered within 90 days of the date they are initiated. Consultations can be extended to 140 days, or longer with the consent of the applicant. This period often runs concurrent with public review of the environmental assessment or EIS. (50 CFR 402.14.)

The USFWS evaluates the information provided and issues a biological opinion which states whether the proposed project will jeopardize the continued existence of the species or will destroy or adversely modify critical habitat. USFWS must deliver its biological opinion to the federal agency within 45 days of the conclusion of the formal consultation. If jeopardy is found, USFWS must suggest reasonable and prudent alternatives which could be implemented to prevent the species' existence from being jeopardized or critical habitat being destroyed. A "no jeopardy" opinion will provide terms and conditions under which incidental take is authorized. Incidental take may be specified in terms of mortality, disturbance, or moving of individual animals (but not plants) or in terms of habitat or habitat features disturbed or destroyed.

The federal agency then completes its NEPA review and renders a decision which considers the USFWS biological opinion. Any permit, lease, or authorization issued by the federal agency must include the terms and conditions specified in the USFWS' biological opinion.

A conference is required where a project is likely to jeopardize the continued existence of any species proposed for listing, or would result in the destruction or adverse modification of critical habitat proposed to be designated for such species. A conference consists of informal discussions involving the federal agency and USFWS; project applicants may also be involved. The USFWS may offer advisory recommendations on ways to minimize or avoid adverse effects on the species. (50 CFR 402.10.)

California Environmental Quality Act (CEQA)

In the California Environmental Quality Act (Cal. Pub. Res. Code 21000 et seq.) the California legislature declared that "the maintenance of a quality environment for the people of this State now and in the future is a matter of statewide necessity" (Id. At 21000(a).) To this end, the legislature declared that "it is the policy of this state to ... prevent the elimination of fish or wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities...." (Id. At 21001.)

CEQA requires all public agencies, including counties, cities and agencies of the State government, to prepare an environmental impact report (EIR) for all projects that they approve or carry out, which identifies significant effects on the environment, alternatives, and the manner in which significant effects can be mitigated (Id. At 21002.1(a).) Public agencies must mitigate or avoid the significant effects on the environment whenever it is feasible to do so (Id at 21002.1 (b).) A project may be deemed to have a significant effect if it will substantially effect an endangered, rare, or threatened species of animal or plant or the habitat of the species; interfere substantially with the movement of any resident or migratory fish or wildlife species; or substantially diminish habitat for fish, wildlife or plants. (*CEQA Guidelines Appendices*, Appendix G, effects (c), (d) and (t).)

National Environmental Policy Act (NEPA)

In the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) Congress declared that "...it is the continuing policy of the federal Government, in cooperation with state and local governments, and other concerned public and private organizations, to use all practicable means and measures … to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." (Id. At 4321 (a).) To that end, the federal government must do the following:

> (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
> (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
> (3) attain the widest range of beneficial uses of the environment without degradation, risk to heath or safety, or other undesirable consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choices;
(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletion resources. [Id. At 4331 (b).]

NEPA requires federal agencies to analyze the environmental impacts of proposed actions and to make public disclosure of these impacts. (Id. At 4332.) This duty is fulfilled by the preparation of an EA and, where an action may significantly affect the quality of the human environment, an EIS. These documents describe impacts and include mitigation measures to lessen the effects of a proposed project to the extent practicable. The significance of an impact is determined by both its context and its intensity. "Context" includes society as a whole, the affected region, the affected interests, and the locality. (40 CFR 1508.27(a).) "Intensity" refers to the severity of impact, including "the degree to which the action may adversely affect an endangered or threatened species or habitat that has been determined to be critical under [FESA]." (40 CFR 1508.27(b)(9).)

Federal Land Policy and Management Act (FLPMA)

In the Federal Land Policy and Management Act of 1976 (Public Law 94-579), the Congress set forth 13 policies for the administration of public lands administered by the BLM. Among these are the following:

• the national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process coordinated with other Federal and State planning efforts;
• goals and objectives be established by law as guidelines for public land use planning, and that management be on the basis of multiple use and sustained yield unless otherwise specified by law;
• the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use;
•regulations and plans for the protection of public land areas of critical environmental concern be promptly developed; and,
• the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands.... [Sec. 102(a).]

FLPMA designated the California Desert Conservation Area (CDCA) (Sec 601 (c)), of which the West Mojave planning area is a part, and directed the Secretary of the Interior to "prepare and implement a comprehensive, long-range plan for management, use, development, and protection of the public lands within the California Desert Conservation Area." (Sec 602 (d)) The purpose as specified by

Congress was "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." (Sec. 601 (b)) The CDCA Plan was completed and signed by the Secretary in 1980 (Bureau of Land Management, 1980).

FLPMA defined areas of critical environmental concern (ACECs) as "areas within the public lands where special management attention is required ... to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." (Sec. 103 (a).) In the development and revision of land use plans, BLM is to "give priority to the designation and protection of areas of critical environmental concern." (Sec. 202 (c) (3).)

Wilderness Act (WA)

In 1964 Congress enacted the Wilderness Act with the intent of establishing a National Wilderness Preservation System composed of federally owned wilderness areas to be protected in their natural condition for the use and enjoyment of the people of the United States. As originally enacted, only the Secretary of Agriculture was directed to identify areas suitable for wilderness in the National Forests. In FLPMA, Congress directed the Secretary of the Interior to identify areas suitable for wilderness on BLM lands.

Biological resources in wilderness areas are afforded the highest level of protection due to restriction on uses. The general management goals which apply to wilderness areas require that the BLM must provide for and manage wilderness areas for long-term protection and preservation of wilderness, scenic, cultural, and natural characteristics for recreation, scientific, and educational purposes. To maintain the primeval character and provide for solitude, a variety of activities are prohibited by the WA within designated wilderness areas. Among these prohibitions are the following: no roads, no structures, no commercial activities, no use of motorized vehicles or equipment, and no landing of aircraft.

BLM must also manage non-conforming but acceptable valid existing rights, and uses permitted by the WA and other statutes, in a manner that will prevent unnecessary or undue degradation of wilderness character. Allowable non-conforming uses include, but are not limited to, the following: (1) previously existing livestock grazing; (2) mining, subject to valid existing rights; (3) wildlife management, including the use of vehicles by CDFG; (4) law enforcement; (5) recreation; and (6) access to private lands.

Wilderness designation and management in the planning area only applies to public lands administered by BLM and by Joshua Tree National Park. Wilderness areas total 5 percent of the planning area.

California Desert Protection Act

In order to preserve the unique and extraordinary natural and cultural resources of the California Desert, Congress enacted the California Desert Protection Act of 1994 (Public Law 103-433). The act designated 14 wilderness areas, approximately 498,500 acres, on BLM - administered lands within the planning area. It enlarged Joshua Tree National Monument and designated it a National Park. It also expanded Red Rock Canyon State Park. The Act also included Congressional findings

concerning military lands and overflights.

The BLM and National Park Service (NPS) have collaborated closely on implementation of various aspects of the California Desert Protection Act, including policies, boundary definition and signing, mineral examinations, records annotation, development of maps and education programs, fire management, and law enforcement operations in wilderness areas.

Sikes Act (SA)

The *Sikes Act* (Public Law 86-797), as amended, authorizes the BLM to develop and implement plans in cooperation with state wildlife agencies for the protection and enhancement of habitat. It authorizes a Memorandum of Understanding (MOU) for the transfer of funds between agencies for projects, inventories, studies, and other programs. It is BLM policy (Bureau Manual 6780.06) that whenever possible, habitat management plans are developed in full cooperation with state wildlife agencies under the authority of the Sikes Act.

With respect to state listed species, BLM manual Section 6840.06A (concerning the management of special status species) directs that the BLM:

> shall carry out management for the conservation of State listed plants and animals. State laws protecting these species apply to all BLM programs and actions to the extent that they are consistent with FLPMA and other Federal laws. In States where the State government has designated species in categories that imply local rarity, endangerment, extirpation, or extinction, the [BLM] State Director will develop policies that assist the State in achieving their management objectives for those species.

Pursuant to an MOU between BLM and CDFG, BLM has agreed to confer with CDFG whenever it determines that a project on federal land may affect a state listed species or its habitat. The project proponent is directed to follow the same procedures required of projects on private land and to obtain from CDFG a section 2081(b) incidental take permit for the project. Approval of the project by BLM is subject to conditions contained in the MOU. Where a species is listed by CDFG and USFWS, federal and state consultations or conferences take place concurrently. However, the state is required to adopt and incorporate federal consultations when both federal and state jurisdictions are involved.

LOCAL JURISDICTIONS: GENERAL PLANS AND ZONING ORDINANCES

The counties, cities and towns which are preparing the West Mojave Plan have land use planning and zoning authority over private property within their area of jurisdiction. State law requires that each county and city adopt and maintain a general plan as a guide to future development. The general plan includes a conservation element which sets policy for management of natural resources including biological values. The general goals and policies pertaining to sensitive biological resources which are set forth in the general plans are described below. Policies that pertain specifically to the long-term conservation of a particular special status species can be found in Chapters III (Mammals), IV (Birds), V (Reptiles, Amphibians and Fish) and VI (Plants).

Land use zoning for local jurisdictions is provided as an indicator of the long-term development

scenario. Zoning classifications identify the nature of land uses permitted in a discrete geographical area. They establish standards and conditions for development. The zone also controls residential density through limitations on parcel size and the number of dwelling units allowed per acre.

Inyo County

The *Inyo County General Plan* (Inyo County Plan) states the following goal pertinent to biological resources:

> •Protect, conserve, develop and utilize natural resources, while at the same time protecting the environment [Conservation and Open Space Element of Inyo County Plan at 22.]

The Inyo County Plan also provides for the designation of Environmental Resource Areas (ERA) where special management attention is provided for the protection of the most important and critical environmental resources and the protection of important and/or critical flora and fauna habitat. Mitigation of environmental impacts are included (Conservation and Open Space Elements of Inyo County Plan at 29.)

The Inyo County Plan describes the general projected pattern of land use (Land Use Element of Inyo County Plan at 7.) All nine Residential land use designations allow for development at one dwelling unit per 10 acres and denser. The other land use designations (Commercial, Industrial, Arable, etc.) zone for concentrated development or require large amounts of space for activities that would have an adverse impact on sensitive areas (Land Use Element of Inyo County Plan at 12.) The Open Space designations limit development at a 40 acre parcel size minimum or as designated (Land Use Element of Inyo County Plan at 15.)

Kern County

The *Kern County General Plan* (Kern County Plan) has the following policy pertinent to biological resources:

> •Habitats of threatened or endangered species should be protected to the greatest extent possible [Kern County Plan at 8-5.]

The Kern County Plan also provides for sensitive wildlife protection through "resource use" designation. Three resource "areas" list wildlife and botanical preserves among their primary permitted uses: Resource Reserve, Extensive Agriculture and Resource Management Areas. The Resource Management Areas are important open space lands and wildlife habitat (Kern County Plan, 8-3.) These areas are primarily for "recreational activities, livestock grazing... ranching facilities, wildlife and botanical preserves...one single-family dwelling unit" (Kern County Plan, 8-3.) There are 12 areas that are zoned for Specific Plans within Kern County. These areas require surveys and mitigation for impacts on biological resources.

The Kern County Plan describes the general projected pattern of land use. All eight Residential designations allow for development at a density ranging from one dwelling unit per acre to one dwelling unit per 20 acres (Kern County Plan, at 5-1.) The other land use designations (Commercial,

Industrial, etc.) allow development at varying levels of intensity. (Kern County Plan, at 6-1.) The Resource designations limit development to a 20 acre parcel size (Kern County Plan, at 1-6.)

Los Angeles County

Los Angeles County's *Antelope Valley Area wide General Plan* (Antelope Valley Plan) lists the following goals and policies pertinent to biological resources:

> •Direct future growth away from areas exhibiting high environmental sensitivity to land use development unless appropriate mitigating measures can be implemented;
> •Minimized disruption and degradation of the environmental land use development occurs, integrating land uses so that they are compatible with natural environmental systems;
> •Prohibit expansion of urban uses into areas of rare and endangered species; and
> •Designate significant plant and wildlife habitats in the Antelope Valley as "Significant Ecological Areas" (SEA's) and establish appropriate measures for their protection (Antelope Valley Plan at V-3).

The Antelope Valley Plan describes the general projected pattern of land uses at buildout for private land in that portion of the County. All of the Residential land use designations allow for development at .5 dwelling units per acre and denser. The Open Space designation is for areas free of structures and roads and "are projected to be maintained in an open or natural state on a long-term basis." (Antelope Valley, at VI-9.)

Development proposals within designated or potential SEAs must comply with specific design criteria:

> •The development is designed to be highly compatible with biotic resources present, including the setting aside of appropriate and sufficient undisturbed areas;
> •The development is designed so that wildlife movement corridors (migratory paths) are left in a natural and undisturbed state;
> •The development retains sufficient natural vegetative cover and/or open spaces to buffer critical resource areas from the proposed use;
> •Where necessary, fences or walls are provided to buffer important habitat areas from development;
> •Roads and utilities serving the proposed development are located and designed so as not to conflict with critical resources, habitat areas or migratory paths; and,
> •Clustering of structures is utilized where appropriate to assure compatibility with the biotic resources present [Id. at VI-26.]

The SEAs are vital to the overall biodiversity of the WMPA, and some of them are essential habitats for sensitive species. There are thirteen SEAs of concern to the WMPA: SEA #49 - Little Rock Wash; SEA #48 - Big Rock Wash; SEA #56 - Ritter Ridge; SEA #57 - Fairmont and Antelope Buttes; SEA #58 - Portal Ridge/Liebre Mountain; SEA #60 - Joshua Tree woodland habitat; SEA #55 - Desert - Montane Transect; SEA #54 - Piute Butte; SEA #53 - Lovejoy Butte; SEA #52 - Alpine Butte; SEA #51 - Saddleback Butte State Park; SEA #50 - Rosamond Lake; and SEA #47 - Edwards Air Force Base. The most important SEAs are Big Rock Wash, Piute Butte, Alpine Butte, and Portal

Ridge/Liebre Mountain. These, in particular, provide nearly the only linkages and wildlife corridors that can be conserved within the West Mojave Plan.

San Bernardino County

The *San Bernardino County General Plan* (San Bernardino County Plan) lists the following goals and policies pertinent to biological resources:

> •Preserve rare and endangered species and protect areas of special habitat value;
> •Establish plans for long term preservation and conservation of biological resources [San Bernardino County Plan at II-C1-4.]

The San Bernardino County Development Code also provides for the designation of a Biological Resource Overlay District where special management is provided for unincorporated areas in the County for the protection of important flora/fauna habitat. Surveys and mitigation measures are required for any development that increases an existing or new land use by 25% (Id. at 85.030220.) The County has categorized Desert Tortoise habitat as one, two, and three; indicated Mohave Ground Squirrel range; and identified Bald Eagle roosts and habitat on the Biotic Resource Overlay. (San Bernardino County Plan at II-C1-4 to 6.)

Surveys of biotic resources on site and adjacent parcels and mitigation measures to reduce impacts to the identified resources are required in Biotic Resource Overlay Districts for all proposed land use map changes and for discretionary land use proposals. These development policies are not restricted to those areas within the Biotic Resource Overlay District, but may be applied to any areas where there are listed or candidate species and their habitat. A monitoring program is also required. Survey results, mitigation and monitoring must be documented in a Biological Resources Report.

The San Bernardino County Plan describes the general projected pattern of land use. There are fourteen Official Land Use Districts that are applied to unincorporated areas of San Bernardino County. The Resource Conservation zone, with the purpose of preserving open space, allows for one dwelling unit per 40 acres. The other land use districts (Agriculture, Rural Living, Residential, Commercial, etc.) allow for one dwelling unit per 10 acres and denser. (San Bernardino County Plan at II-D6-7.)

City of Adelanto

The *City of Adelanto General Plan* (Adelanto Plan) lists the following goals and policies pertinent to biological resources:

> •Assure adequate protection and conservation of all native vegetation and wildlife habitats within the planning area; and
> •The Mojave River, as well as other major stream courses, shall remain as open space to be managed as wildlife movement corridors [Id. at VII-26-29.]

The Adelanto Plan describes the general projected pattern of land uses at buildout for private land in the City. The residential land use designations allow for development at one to six dwelling units per acre and denser. The Adelanto Plan also designates 871 acres Open Space/ Public Land/ Schools.

Commercial and Light Industrial allow for 100% lot coverage minus parking requirements (Adelanto General Plan at III-20.)

The City of Adelanto employs two proactive programs that may have a beneficial impact on biological resources: 1) the possible use of preferential assessments for retaining open space or conservation easements for habitat; and 2) the distribution of an information flyer to "guide citizens and developers towards greater understanding of biological environments..." (Id. at VII-26-29.) To date there have been no conservation easements to retain habitat.

Town of Apple Valley

The *Town of Apple Valley General Plan* (Apple Valley Plan) states the following goal pertinent to biological resources:

> • The Town will make every effort to preserve significant mature native trees, native vegetation, landforms and wildlife habitat within the planning area.

"No discretionary land use project, public or private, shall be approved by the town unless it is found to be consistent with the General Plan." (*Town of Apple Valley Municipal Code* (Apple Valley Code), Title 9, Section 9.02.040.)

The Apple Valley Plan describes the projected pattern of land uses at buildout for private land in the Town. A Residential Zoning designation allows for one dwelling unit per 5 gross acres (including roads) to one development per 0.4 net acres (excluding roads) for single family development and two to ten dwelling units per net acres for medium density (higher density housing types). Commercial and Industrial Zoning designations allow for varying intensity of development. The Open Space designation limits residential density to one dwelling unit per 20 acres.

Open Space districts (OSD) include but are not limited to: Bell Mountain, Fairview Mountain, Apple Valley Country Club, the Knoll's and the Mojave River Valley (Apple Valley Plan at 18, Apple Valley Code at Section 9.55.010.) The objectives of OSDs include "the preservation of ... native vegetation ... and wildlife habitat" and "the preservation of the integrity, function, productivity and long-term viability of environmentally sensitive habitats." (Apple Valley Code at Section 9.55.010.) The Apple Valley Code allows the designation of both Conservation and Recreation OSDs. Conservation OSDs are intended in part to "assure the continued existence of adequate wildlife habitat and foster the free movement of wildlife within the desert." (Id. At Section 9.55.020.) The Apple Valley Code specifies uses which are permitted within OSDs, and those which are prohibited (Id. At Section 9.55.030-A).

"The Town finds that it is in the public interest to promote healthy and abundant riparian habitats" because, among other reasons, "riparian habitats provide a unique wildlife habitat." (Id. At Section 9.76.030.) Accordingly, the Apple Valley Code requires that the removal of vegetation within 200 feet of the bank of a stream "indicated as a blue line" on a United States Geological Survey topographic map is subject to a tree or plant removal permit (excepting emergency Flood Control District operations or Special District water conservation measures). (Id.)

Although the Apple Valley Code includes protections for Desert Native Plants (Section 9.76.020), none of the species being considered by the West Mojave Plan are within the scope of these provisions.

City of Barstow

Barstow's General Plan (pg. B.II.9) lists the following goals and policies pertinent to biological resources:

> •Seek to preserve the remaining biological resources within the planning area;
> •Perform site-specific studies prior to development activities to determine the precise mitigation necessary to preserve and enhance biological resources, with particular attention given to the preservation of areas identified as having high biological significance;
> •Whenever possible, conserve suitable habitat for threatened and endangered species...;.
> •Establish corridors for the movement of wildlife between the established Desert Wildlife Management Areas and between desert tortoise critical habitat;
> •Strive to maintain native riparian and associated natural habitats along the Mojave River..; and
> •Maintain the Mojave River as a travel and watershed corridor, maintaining the link between natural areas to the north and south of Barstow. [City of Barstow, General Plan - Part B, II.9.]

The General Plan divides the City into high, medium and low biological resource areas. High biological resource areas are defined as the following:

> those lands south, north, and northeast of the Corporate area that are mostly undeveloped. Most of the special-status, scrub-associated species described in this report occur in these areas. Areas to the south are particularly important as they factor into regional plans designed to protect the threatened tortoise from extinction in the west Mojave Desert...Thus, linkage corridors are proposed between Outlet Center Drive and Boulder Road to connect the western Fremont - Kramer area with the eastern Ord-Rodman area. Hilly areas north and northeast of the Corporate area are relatively undisturbed... [Barstow GP C:II.5.8-9.]

The General Plan (Section B.I) describes the general projected pattern of land uses at buildout of the City. All seven residential land-use designations allow for development at one dwelling unit per 2.5 acres and denser, depending on designation. The other ten land-use designations (Commercial, Industrial, etc) allow buildings covering up to 50% of the lot.

City of California City

The *City of California City General Plan* (California City Plan) lists the following goals and policies pertinent to biological resources:

> •Preserve and protect conservation resources of sensitive plant and wildlife species that are unique to California City environs [California City Plan at 43]; and,
> •Protect sensitive plant and wildlife species, in accordance with State and federal laws and regulations, and to provide for maintenance of supportive habitat for such species in balance with the needs of humans [California City Plan at 44].

Residential land use densities range from one dwelling unit per 2 acres to six dwelling units per acre. Residential/Commercial limits development at a density of 4-8 dwelling units per acre (California City General Plan at 14).

City of Hesperia

The *City of Hesperia General Plan* (Hesperia Plan) states the following goal pertinent to biological resources:

> •Preserve sensitive or protected desert vegetation and animal species, and habitat areas throughout the planning area;
> •Conduct a biological assessment of the planning area and identify sensitive habitat areas.
> 1) Establish a biological resource map and evaluate new development proposals for impacts on biological resources.
> 2) Through the development review process, require appropriate mitigation for developments which will adversely impact biological resources; and,
> •Assess impacts of proposed development on biological resources on a site specific basis [Hesperia Plan, CN-26-27].

The Hesperia Plan provides for the protection of the most important and critical environmental resources through the City's Master Environmental Assessment. Surveys and mitigation measures that include the establishment of a preserve area are required if there are any endangered species identified. To date there have been no preserve areas designated (Hesperia Plan, CN-7).

The Hesperia Plan describes the general projected pattern of land uses at buildout for private land in the City. All residential land use designations allow for development at 0.4 dwelling units per acre up to 10-15 dwelling units per acre (Hesperia General Plan at L-10). Single family residential development within the Planned Mixed Use designation allows up to four dwelling units per acre. Special Development designation placed upon areas within the Summit Valley and the Oak Hills requires the completion of a specific plan. One dwelling unit per acre is allowed in these areas, although greater density is allowed upon the completion of a comprehensive Specific Plan (Hesperia General Plan at L-14). Commercial zoning requires a 5 acre minimum for general commercial uses and 10 acre minimum for regional commercial uses. (Hesperia General Plan at L-23).

City of Lancaster

The *City of Lancaster General Plan* (Lancaster Plan) lists the following goals and policies pertinent to biological resources:

> •Identify, preserve and maintain important biological systems within the study area, and educate the general public about these resources, which include the Joshua Tree - California Juniper Woodlands, areas that support endangered or sensitive species, and other natural areas of regional significance;

•Consider designation of environmentally sensitive areas as future park sites or open space resources and pursue acquisition of these sites;
•Preserve significant desert wash areas to protect sensitive species that utilize these habitat areas; and,
•Encourage the protection of open space lands in and around the California Poppy Preserve, including Fairmont and Antelope Buttes, to preserve habitat for sensitive mammals, reptiles, and birds, including raptors. (Lancaster Final EIR, Mitigation Monitoring Program at E-1-7.)

Policy 3.4.5 requires that development proposals analyze both short and long-term impacts to biological resources. Mitigation measures are also required. In areas adjacent to preserve areas, identification of development impacts to the preserve and mitigation are required. On-site dedication or easement for habitat conservation may be required for new projects. In addition, the City requires a development fee for acquisition of private lands for conservation of biological resources, and educational programs for the community to encourage the understanding and protection of flora, fauna and habitat.

The City of Lancaster is establishing a Joshua Tree Woodland Preserve. Forty acres have been acquired for the preserve, and 45 additional acres are being purchased. This area will serve as an educational outreach facility. It is not currently known what species are found at the Preserve.

The Lancaster Plan describes the general projected pattern of land uses at buildout for private land in the City. All nine Residential land use designations allow for development at one dwelling unit per 10 acres and denser. The Commercial and Industrial land use designations allow development at varying levels of intensity determined by floor area ratio. (Lancaster Plan General Plan at VIII-5-6). There is one wash area that is in the City limits, and it is designated Open Space.

City of Palmdale

The *City of Palmdale General Plan* (Palmdale Plan) states the following goal pertinent to biological resources:

•Protect significant ecological resources and ecosystems, including, but not limited to, sensitive flora and fauna habitat areas [Palmdale Plan at ER-4.]

The Palmdale Plan describes the general projected pattern of land uses at buildout for private land in the City. All seven residential land use designations allow for development at one dwelling unit per 2.5 acres and denser (Palmdale Plan at L-10). Other land use designations (Commercial, Industrial) limit development at varying levels of intensity. (Palmdale Plan at L-18, 223). Open Space designation "is appropriate to protect sites with physical limitations such as flood plains, very steep terrain...or significant natural resources" (Palmdale Plan at L-26).

City of Ridgecrest

The *General Plan for the City of Ridgecrest* (Ridgecrest Plan) lists the following polices that provide for biological resources:

•Identify and establish habitat preservation areas....; and,
•Promote the survival of native wildlife species and the preservation of their natural habitat (Ridgecrest Plan at 5-4).

Policy 3.1.6 prohibits development in environmentally sensitive areas (Id. at 3-3). The potential impact of an action on biological resources is assessed using a significance threshold that evaluates whether without mitigation, a measurable change is experienced in the species or habitat (Ridgecrest Plan EIR at 11-18-11). Off-highway vehicle use is prohibited in designated habitat preservation areas. Policy 5.3.1 calls for the promotion of educational outreach for desert flora and fauna (Ridgecrest Plan at 5-8).

The Ridgecrest Plan describes the general projected pattern of land uses at buildout for private land in the City. All four Residential land use designations allow for development at one dwelling unit per 20 acres and denser (Ridgecrest General Plan at 1-6). There are two types of Open Space designation: Parks/Schools and Natural Open Space. There are 2,420 acres of Natural Open Space (Ridgecrest General Plan at 1-7). The majority of these open space lands are located on China Lake NAWS and on BLM managed lands within the City limits.

City of Twentynine Palms

The *City of Twentynine Palms General Plan* (Twentynine Palms Plan) lists the following goals pertinent to biological resources:

•Protect biological resources to the extent possible, through open space habitat preservation (Twentynine Palms Plan, Goals at 9); and,
•Endangered flora and fauna shall be identified and protected (Twentynine Palms Plan, Conservation Element, at 2).

The Twentynine Palms Plan describes the general projected pattern of land uses at buildout for private land in the City. All four Residential land use classifications (including Open Space Residential) allow for development at one dwelling unit per ten acres and denser. The other land use designations (Commercial, Industrial) allow development at a concentrated density (Twentynine Palms Plan, Land Use at 2).

City of Victorville

The *City of Victorville General Plan* (Victorville Plan) identifies the following goals pertinent to biological resources:

•Victorville as a community which continues to identify and mange resources in coordination with its growth and development;
•Victorville as a community that recognizes the need to coordinate its management of resources with other agencies;
•The City will monitor new information regarding the status of sensitive floral and faunal species to revise its biotic inventory;
•The City will continue to require preservation of native Joshua tree woodlands and specimens where possible;

•The City shall continue to require preservation of the Mojave River riparian habitat;
•The City will continue to participate in a cooperative effort with other agencies to monitor and review the management of resources; and,
•The City will continue to cooperate and consult with federal, state, county and local agencies in resolving regional resource management issues.

The Victorville Plan describes the general projected pattern of land uses at buildout for private land in the City as well as its sphere of influence. The Residential land use designations allow for development densities ranging from one dwelling unit per forty acres to twenty-four dwelling units per acre (Victorville Plan, Land Use Element, Table 4). Commercial, Industrial, and Other land use categories allow development densities up to one hundred percent lot coverage. The Open Space land use designation refers to three categories of open space: land that is to remain undeveloped due to sever development constraints, reserved public open space in parks, and areas that are in agricultural preserves. The AE (Exclusive Agriculture), FP (Conservancy and Flood Plain), and P-C (Public and Civic) zone districts apply to the "Open Space" designations. This category includes the Mojave River flood plain, Mojave Narrows Regional Park, golf courses, lakes and agricultural areas adjacent to the Mojave River. Residential development is permitted in certain areas designated for Open Space when the underlying zone is AE. Maximum residential development density in these areas is one dwelling unit per five acres (Victorville Plan, Land Use Element, 16).

Town of Yucca Valley

The *Town of Yucca Valley General Plan, Draft Environmental Impact Report* (Yucca Valley Plan/EIR) lists the following goal pertinent to biological resources:

•To protect and preserve the Town's biological resources, especially those sensitive, rare, threatened or endangered species of wildlife and their habitats [Yucca Valley Plan/EIR at 111-74].

The Yucca Valley Plan also provides for biological resource protection through the establishment of "Resource Areas." The biological resource areas are evaluated and assigned values: expected low, medium, and high (Id. at 111-67). High Biological Resource Areas are mostly undeveloped and Open Space (Id. at 111-68). There are two Open Space areas in the General Plan: the Southern and Sawtooth Open-Space areas.

The Town also proposes to establish a multipurpose natural water course system "that could ... provide enhanced habitat and possibly serve as wildlife corridors..." (Id. at matrix m-5). The Covington Wash is one of the areas identified. "The wash is... expected to function as a wildlife corridor for the tortoise and other species" (Id. at 111-75).

The Town of Yucca Valley requires that development in areas with sensitive species and habitat must be at a compatible intensity:

In areas that have been identified as having a high resource value, special development policies will be created in order to preserve and enhance the biological resource in these areas [Yucca Valley Plan/EIR at 111-74].

Biological resource assessments are required for development in several areas that are in the vicinity of sensitive flora/fauna and habitat. Mitigation measures and impacts must be included (Id. at III-74). The plan proposes the "development of an impact mitigation fee program to help fund the purchase and management of unique or sensitive biological resource areas occurring on private lands, including habitat of the desert tortoise" (Id. at 111-75).

The Yucca Valley Plan describes the general projected pattern of land uses at buildout for private land in the Town. All seven Residential land use designations allow for development at one dwelling unit per 20 acres to 14 dwelling units per acre (Yucca Valley Plan/EIR at I-9). The other land use designations (Commercial, Industrial) limit development at varying levels of intensity. (Yucca Valley Plan/EIR at I-13.) A total of 511 acres are zoned Open Space for park lands, lands that pose a human hazard and biologically sensitive areas (Yucca Valley Plan/EIR at I-9).

Indian Wells Valley Water District (IWVWD)

Indian Wells Valley Water District delivers water to the Indian Wells Valley area including the City of Ridgecrest. IWVWD was created as a county water district under the California Water Code and is governed by a board of directors elected by residents located in the service area.

Self-governing special districts are created under various state statutes and are not required to comply with local zoning or other development ordinances or codes. In general, special districts are not required to obtain building or grading permits from city or county development departments. All construction projects are, however, subject to the CEQA, CESA, and FESA, and authorization for incidental take must be obtained from CDFG and USFWS for projects that impact habitat in which listed species are present. In late 1997 IWVWD completed "Biological Guidelines for Future Construction Projects" (Guidelines) which is a supplement to their draft "Domestic Water System General Plan." The General Plan is intended to serve as a guide for system improvements during the next 10 to 20 years. The Guidelines are designed to assist IWVWD in completing environmental documentation required for projects relative to CEQA, CESA, and FESA. High, Medium, and Low Biological Resource Areas are identified for the 38 square mile planning area. Biological surveys, proposed mitigation measures, and compliance with regulatory laws are discussed relative to these resource areas.

STATE AND FEDERAL AGENCIES: STATUTES, REGULATIONS AND LAND USE PLANS

State Parks and Recreation

State parks are established by statute and managed for the protection of natural resources including all plants and animals within the park boundary. California State Park Laws "were established to protect the park resources, to administer the parks and to maintain a park atmosphere." (California Code of Regulations.) The following regulations apply to fauna and flora in state parks:

•Animals: No person shall molest, hunt, disturb, injure, trap, take, net, poison, harm, or kill any kind of animal or fish... (California Code of Regulations At Section 4305); and,

•Plants and Driftwood: No person shall willfully or negligently pick, dig up, cut, mutilate, destroy, injure, disturb, move, molest, burn, or carry away any tree or plant or portion thereof,... (Id. At 4306).

The following is the mission statement for California State Parks:

> Mission: To provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protect its most valued natural and cultural resources, and create opportunities for high quality outdoor recreation.

There are four State Parks that provide habitat for special status species in the West Mojave planning area: Antelope Valley California Poppy Preserve, Red Rock Canyon, Ripley Desert Woodland and Saddleback Butte. Red Rock Canyon State Park is the only one with a management plan, adopted in 1982 and due to be revised because of recent additions to the park. The 1982 Red Rock Canyon State Park Management Plan (Red Rock Plan) established policy for park management. The Red Rock Plan states the following:

> The purpose of Red Rock Canyon State Park is to protect and perpetuate the spectacular high desert landscape, associated natural ecosystems... The desert plant and animal communities shall also be considered prime resources, particularly the rare, endangered, threatened, and special interest species. [Red Rock Plan, page 16.]

There are several policies specific to management of wildlife within Red Rock Canyon State Park:

> •Distribution of identified special interest plants in the unit shall be monitored and documented on unit base maps (including Red Rock tarplant);
> •Distribution of animals of special interest shall be monitored in the unit. Special interest species include the Mojave ground squirrel, desert tortoise, golden eagle, prairie falcon, and Mojave green rattlesnake... Active nest sites used by the golden eagle and prairie falcon shall also be mapped;
> •Golden eagle and prairie falcon nest sites shall be protected by establishing a buffer zone in which no facility or use that would tend to concentrate visitors shall be permitted; and,
> •Springs and seeps in the unit shall be managed to protect and perpetuate their value to wildlife. Natural water supplies that support wildlife shall not be used for domestic purposes, unless it can be shown that natural values would not be adversely affected. No new facility or activity shall be permitted near a spring or seep that would significantly affect its wildlife value in an adverse manner. [Id. At page 20.]

The Red Rock Plan designated two preserves within the park. Red Cliffs Natural Preserve was "established to provide for special protection and management of the outstanding geologic features and other natural resource values in the central portion of Red Rock Canyon State Park....Visitor use in

the preserve shall be permitted to the extent that natural ecological and scenic values are not significantly altered or disturbed." (Id. at page 16.) Hagen Canyon Natural Preserve was:

> established to provide for protection and perpetuation of natural geological and ecological processes in Hagen Canyon and the vicinity. Prime resource values in the preserve include...several rare, endangered, or threatened plant species, and habitats supporting several animal species of special interest and importance. Facility development and public use in or adjacent to the preserve that significantly alter or disturb natural ecological processes, scenic values, or cultural values shall not be permitted. [Id. at page 17.]

California State Lands Commission (SLC)

The State Lands Commission manages the state school sections acquired from the federal Government after statehood. SLC manages these lands to generate revenue for the State Teachers Retirement System. The primary uses of these lands include, but are not limited to, mining, energy development, rights-of-way, and livestock grazing. While the purpose of SLC lands is revenue production, uses come under the authority of the CEQA and CESA. These acts require review and mitigation of impacts on important natural and cultural values.

Title VII of the California Desert Protection Act requires the federal Government to enter into an exchange of lands program with SLC to exchange SLC lands out of wilderness and national parks and preserves. Throughout the California Desert this program will reduce the current amount of SLC lands by about 50 percent.

SLC lands manages for the following land uses:

Mineral Exploration and Development: The leasing of state lands for mineral development must comply with Surface Mining and Reclamation Act (SMARA). SMARA requires CEQA review and mitigation, and approval of reclamation plans. CDFG reviews all proposed projects for endangered species requirements and may require mitigation and compensation.

Cattle/ Horse/ Sheep Grazing: Leases are issued by SLC for livestock grazing on those sections of state lands located within BLM grazing allotments. The fee is based on acreage and the lease is issued for ten years.

FESA And CESA Compliance: Land use decisions involving state listed species require an authorization under Section 2090 of CESA. Decisions involving federally-listed species require an incidental take permit under Section 10(a)(1)(B) of FESA, or under Section 7 of FESA if the action involves federal lands or agencies. Most of these are individual sections of land intermingled with BLM managed public lands (Sections 16 and 36 in each township).

California Department of Fish and Game

The legislature of the State of California has vested in the CDFG "the principal responsibility for protecting, conserving, and perpetuating native fish, plants and wildlife, including endangered species... for their aesthetic, intrinsic, ecological, educational, and economic value." (Cal. Fish and Game Code

section 2701(c).) CDFG is also "charged with maintaining and perpetuating California's most significant natural areas." (Id.) To accomplish this goal, the legislature recognized that "the purchase of land is often necessary." (Id.)

There are seven properties managed by the CDFG within the West Mojave planning area: four ecological reserves (ER) (Fremont Valley, Indian Joe Springs, King Clone, and West Mojave Desert), one proposed ecological reserve (Indian Wells Valley), one wildlife management area (WA) (Camp Cady), one conservation easement (CE)(Hinkley) and scattered parcels within the Desert Tortoise Natural Area. Public entry and use of the these reserves must be compatible with the primary purpose of the reserve and subject to both general and specific rules and regulations. Limits are placed on motor vehicle access, use of firearms, and camping. Commercial uses including livestock grazing, mining, and harvesting of native vegetation are not allowed. CDFG is also responsible for managing other miscellaneous parcels acquired through compensation and mitigation for the desert tortoise.

Ecological Reserves: It is the policy of the State of California, ... "to protect threatened or endangered native plants, wildlife or aquatic or large heterogeneous natural marine gene pools for the future use of mankind through the establishment of ecological reserves." (Id. At § 1580.) The California Fish and Game Commission (Commission) may acquire or control and administer native lands for the state. Where appropriate, the Commission may designate these lands as ecological preserves and adopt regulations for the occupation, utilization, operation, protection, enhancement and maintenance of these areas.

Wildlife Management Areas: Wildlife Management Areas are established by the Commission for the purpose of propagating, feeding and protecting birds, mammals and fish. The Commission may acquire by purchase or lease, and may occupy develop, maintain, use and administer land and water or land and water rights suitable for the purpose of wildlife management. The regional managers have the authority to regulate public use of these areas including motor vehicle access, camping, hunting, use of dogs, and pesticide use.

Conservation Easements: The Department of Fish and Game acquires conservation easements to protect sensitive plant, fish, and wildlife resources, on lands that full fee acquisition is not feasible. Conservation easements may also be purchased to provide access across private property to otherwise landlocked public lands. Conservation easements may be purchased outright by the Department or may be dedicated as a condition of mitigation by a project proponent seeking to develop a portion of the land. Conservation easements may also be established off-site to mitigate for habitat destroyed by the construction of roadways, dams, power lines, pipelines, subdivisions, etc.

Joshua Tree National Park (JTNP)

The National Park Service Resource Management Guidelines (NPS-77) directs the park to "... identify and promote the conservation of all federally listed, threatened, endangered, or candidate species within the park boundaries." JTNP is a protected preserve where sensitive, threatened, or endangered species are actively managed. JNTP was originally established as a national monument, and one of the reasons for doing so "was preservation of the natural resources of the Colorado and Mojave Deserts. The natural resource preservation emphasis was so strong that the original name contemplated for the monument was Desert Plants National Park." (*Joshua Tree General*

Management Plan (GMP) at page 7.)

JTNP is committed to manage for the conservation of all native species located in the Park; the first goal is: "Manage land and wilderness to preserve them unimpaired for future generations." (GMP at page 10.) Natural resource management would "(1) develop a scientific basis for natural resource management decisions by performing or coordinating natural resources research, (2) protect all native plant and animal species in the park so that biological diversity can be maintained, (3) protect natural resources from human disturbance in order to preserve the diverse ecological systems, (4) restore unnaturally altered resources through direct actions, and (5) promote ecosystem management through direct NPS action and through cooperation with local communities, regional, state, and federal agencies." (GMP at page 25.)

The GMP, which was completed in 1994, prescribes management zones for all lands. A GMP amendment, the *Backcountry and Wilderness Management Plan*, is being developed at this time to prescribe management of the natural zone on former monument lands and to prescribe management of all the land added to the park in 1984. Among the provisions was the addition of 234,000 acres of public lands to JTNP. The management zones determine how specific lands are to be managed to protect resources and provide for visitor enjoyment. Four zone classifications are used - Natural, Historic, Development, and Special Use. Within each zone, subzones may be designated to allow for particular management needs. Following is a description of the current and proposed zones:

Natural Zones. Preservation of natural resources and processes have priority in this zone. Only such uses that do not adversely affect natural resources and processes are permitted. Two subzones include:

> *Wilderness* - This subzone is governed by the strictest of preservation standards, including national wilderness policy. The lands in this zone are managed for the preservation of natural resources and processes and, in addition, for the preservation of their undeveloped and primeval character; and,
>
> *Natural Environment (backcountry transition)* - This is land that is managed for the conservation of natural resources and processes but not legislatively designated as wilderness. Within this subzone (in designated locations), facilities may be constructed, motor vehicles operated, aircraft landed, and other activities engaged in that are prohibited in wilderness. However, since this subzone is also intended to preserve natural resources, future development would be small.

Park Development and Special Use Zones - A small percentage of the Park is or will be devoted to development including park facilities, buildings and roads.

Bureau of Land Management

Section 302(a) of FLPMA directs that public lands administered by the BLM be managed "under principles of multiple use and sustained yield, in accordance with ... land use plans." The term "multiple use" is defined by section 103(c) of FLPMA as including:

> the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the

> American people; ... a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including ... wildlife ... with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

Under the concepts of multiple use and sustained yield, public lands within the planning area may be put to a variety of uses, so long as those uses conform to the following:

> (1) The CDCA Plan's Multiple Use Class Guidelines;
> (2) The BLM and CDFG Tortoise Management Policy's goals and measures for desert tortoise Categories I, II and III;
> (3) Special management considerations required in designated critical habitat for federally listed species pursuant to Section 4(b)(2) of FESA;
> (4) Terms and conditions set forth in USFWS biological opinions for federally listed species; and,
> (5) Other special conservation measures contained in area-specific activity plans and programs. BLM must take into consideration recommendations set forth in USFWS Recovery Plans for federally listed species.

California Desert Conservation Area Plan: Section 601 of FLPMA established the California Desert Conservation Area (CDCA) in recognition of the unique location of exceptional desert values adjacent to an area of large population, and directed the Secretary of the Interior to prepare and implement a comprehensive, long-range plan for the management, use, development, and protection of the public lands within the CDCA.

In 1980, BLM adopted the California Desert Conservation Area Plan (Desert Plan). The following policies concerning wildlife species and habitats are formulated in the Desert Plan:

> 1) Manage federally and State-listed species and their habitats to comply with existing legislation and Bureau policies. In brief, the continued existence of these species will not be jeopardized by Bureau actions. Where possible and feasible, populations and habitats will be stabilized and/or improved. The overall objective will be to improve the status of such species so that delisting can occur. Management of these species and their habitats will occur through close coordination with other State and federal agencies.
> 2) Give certain species, designated sensitive by the BLM, special consideration and attention in the planning process because of their present condition and status. The overall objective would be to manage these species and their habitats so as to minimize the potential for federal or State listing.
> 3) Consider the habitat of all fish and wildlife in implementing the [Desert Plan], primarily through adherence to and development of objectives dealing with habitats and ecosystems....
> 4) Manage representative habitats using a holistic approach. Each habitat will be large enough and managed in such a way as to retain viability and integrity of the natural systems.
> 5) Give habitats unique to the CDCA special management consideration and manage

them so as to maintain their unique biological characteristics.
6) Manage sensitive habitats using a holistic, systems-type approach. Sensitive habitats are defined much like "sensitive species." These habitats are of very limited size within the CDCA and are especially fragile or susceptible to impacts. Examples of kinds of sensitive habitats are: riparian areas, wetlands, sand dunes, relict and island habitats, washes (such as catclaw-blackbanded rabbitbrush and ironwood washes), and important ecotonal zones between the different major ecosystems and deserts.... [Desert Plan, 1980, page 30].

On the basis of uses and resource sensitivity, the Desert Plan geographically designated public lands within the CDCA into four multiple-use classes (MUC), and established management guidelines for each class:

Class C (Controlled Use) -- Wilderness.

Class L (Limited Use) -- "... protects sensitive, natural, scenic, ecological, and cultural resource values ... managed to provide for generally lower-intensity, carefully controlled multiple use for resources, while ensuring that sensitive values are not significantly diminished."

Class M (Moderate Use) -- "... a controlled balance between higher intensity use and protection of public lands ... management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause."

Class I (Intensive Use) -- "... provide for concentrated use of lands and resources to meet human needs. Reasonable protection will be provided for sensitive natural and cultural values. Mitigation of impacts on resources and rehabilitation of impacted areas will occur insofar as possible." (Desert Plan at 13.)

See Appendix D for more information on specific BLM land use designations and actions; definitions of designations and the level of commitment associated with them are discussed.

United States Fish and Wildlife Service

Congress has directed the USFWS to "take such steps as may be required for the development, advancement, management, conservation, and protection of fish and wildlife resources..." (16 U.S.C. § 742 f (a)(4).) The USFWS is responsible for the implementation and enforcement of FESA.

Section 7: The USFWS is responsible for consultation with federal action agencies and the issuance of Biological Opinions under section 7 of FESA. These consultations are required anytime an action by a federal agency may affect a listed or proposed species or result in the destruction or adverse modification of critical habitat. The USFWS has completed approximately 250 section 7 consultations in the Mojave Desert since the emergency listing of the desert tortoise in 1989. Similarly, conferences are required under FESA for federal actions affecting species proposed for listing.

Section 10: USFWS is responsible for coordinating the preparation of HCPs. These plans are used when an action on private land will result in incidental take of a listed species. The HCP results in a

FESA section 10(a)1(B) incidental take permit. Four habitat conservation plans have been completed to date in the West Mojave planning area:

1.Yucca Valley Church - - Yucca Valley
2.Sunland Development - - Victorville
3. Sand and Gravel Mine - - Lucerne Valley
4. Wild Wash Sand and Gravel Mine - - San Bernardino County

The issuance of only four 10(a) permits since the 1989 emergency listing of the tortoise is indicative of permits not being solicited for projects. The West Mojave Plan will address this disparity between projects occurring and permits issued to date.

Military Lands

Military lands encompassed by the Plan include Fort Irwin National Training Center, the Naval Air Weapons Station China Lake, the Air Force Flight Test Center at Edwards Air Force Base, the Marine Corps Air Ground Combat Center, and the Marine Corps Logistics Base at Barstow. These installations comprise approximately 2.6 million acres of the total land base encompassed by the Plan. Unless an installation is specifically referred to, hereinafter, these lands will be known as Department of Defense ("DOD") lands.

Ownership: Department of Defense lands are United States fee simple property held by the Service Secretaries (Army, Navy, Air Force), or are lands which have been withdrawn by Congress from public domain for military purposes. These lands are reserved for use by the appropriate Service Secretary for national defense purposes.

Descriptions of Military Land Uses: Land use on DOD installations within the Planning Area cover a very broad spectrum. Some areas are highly disturbed and no longer support the constituents characteristic of native Mojave Desert habitat. Other areas may have had little or no human impact since their designation as DOD lands. Land use at DOD installations may be categorized as follows:

(1) **Cantonment areas** - These highly used areas resemble small cities. They commonly contain family housing, dormitories, administration and industrial areas, and all the infrastructure associated with these activities. Cantonment areas contain graded, landscaped, paved or otherwise altered grounds over years of military use. These areas no longer contain the constituents associated with the native Mojave Desert ecoregion.

(2) **Airfields** - These areas are used for military air operations and include hangers, shops, aircraft parking areas, taxiways, runways, fuel storage areas, and common structures associated with aviation operations. Native plants and animals may habitate areas between runways and in exclusion buffer zones.

(3) **Military Maneuver and Bivouac Areas** - These areas are used by tracked vehicles, all terrain wheeled vehicles, and troop concentrations while conducting simulated combat tactics, maneuvering, combat infantry training,

small bore weapons training, artillery training, and various other aspects of combat readiness training. These areas are disturbed and may contain only remnant native species populations.

(4) **Aerial Gunnery Range and Impact Areas** - These areas are impact ranges for strafing, bombing, artillery firing, and demolition training. Explosive detonation is generally concentrated around specific targets within impact areas which are surrounded by large safety zones. Because little other activity takes place in impact areas, wildlife use may be relatively high and they generally contain constituents associated with the native Mojave Desert habitat.

(5) **Unexploded Ordnance Areas** - These areas vary in size depending on the type of ordnance and the military activity with which they are associated. Clearance of these areas is usually not desirable or feasible, so human access is highly restricted. Due to the limited access and the lack of ground disturbing activity, these areas may provide habitat for native species.

(6) **Rifle Ranges** - These may be intensively used for small arms training. For safety reasons, large fire-fan or buffer zones are created around ranges. These buffer zones are frequently used by wildlife and may contain adequate habitat for native vegetation.

(7) **Aircraft and Weapons Systems Test Ranges** - These test ranges are very large expanses of open area used for the testing and evaluation of aircraft, airborne weapons systems and the development of deployment tactics. Test ranges incorporate a wide variety of discrete and general purpose target impact areas for inert and live ordnance deliveries, observation locations for supporting data acquisitions systems, safety buffer zones and corridors for ingress and egress to target(s) and various administrative support areas. These test ranges support the research, development, test and evaluation of new and modified aircraft and weapons systems. Test ranges also support the development of new system(s) deployment tactics and readiness training. Habitat that is not directly associated with targeting may contain the constituents associated with the natural Mojave Desert ecoregion.

(8) **Safety/Buffer Zones** - These zones are normally associated with installation perimeters, safety zones around live fire areas, or safety zones around testing and training areas and around sensitive Security areas. Low intensity human activity takes place in these zones, but is normally restricted to military personnel, contractors, and some military training, such as specialized unit training. Buffer zones are normally of moderate to high quality biological value and may support native wildlife and plant species.

Congressional Findings Regarding Military Activities in California Deserts: In the California Desert Protection Act of 1994, Title VIII - Military Lands and Overflights, ∮801(b), the Congress

found that:

> (1) military aircraft testing and training activities [in the California Desert] ... are an important part of the national defense system of the United States, and are essential in order to secure for the American people of this and future generations, an enduring and viable national defense system;
>
> (2) the National Park System units and wilderness areas designated by this Act lie within a region critical to providing training, research, and development for the Armed Forces of the United States and its allies;
>
> (3) there is a lack of alternative sites available for these military training, testing, and research activities;
>
> (4) continued use of the lands and airspace in the California desert region is essential for military purposes; and
>
> (5) continuation of these military activities, under appropriate terms and conditions, are compatible with the protection and proper management of the natural, environmental, cultural, and other resources and values of federal lands in the California desert area.

Furthermore, §802(a) provides that "nothing in this Act, the Wilderness Act, or other land management laws generally applicable to the new units of the National Park Wilderness Preservation Systems (or any additions to existing units) designated by this act, shall restrict or preclude low-level overflights of military aircraft over such units, including military overflights that can be seen or heard within such units."

Current Land Management Objectives: DOD lands in the Mojave Desert are used to further national security objectives by providing areas for integrated infantry, armor, artillery, and air combat training, weapon systems development and testing, and research. National security considerations and the inherent danger of injury restrict public access to DOD lands in the Mojave. However, DOD lands may be utilized in providing for quality of life, recreation, and stewardship efforts. All Mojave Desert DOD installations have accepted their stewardship responsibilities, whether statutory or regulatory, and conserve and protect our nation's natural resources.

Current land use practices on DOD lands seek to accommodate both operational requirements and conservation programs through development and implementation of land use management plans, natural resources management plans, and installation master plans. These plans include management of areas that have sensitive species, threatened or endangered species, wetlands, agriculture potential or leases, and aesthetic value. To the extent possible, ecosystem management approaches are being employed in military land use planning. Installation commanders have programs to ensure all personnel are aware of the ecological value of the lands placed under their trust and their responsibilities to protect these lands. Military commanders must ensure that their personnel are afforded realistic training and system test environments that approximate, to the extent possible, actual combat conditions. The requirements for realistic testing and training provide further incentive to conserve natural resources and the foundation upon which the military mission is based. To the extent

they are able, each installation protects areas from overuse and expends resources to rehabilitate lands from previous detrimental effects. Tracts of land that have been impacted by tract vehicles, bivouac areas, runways, test facilities, and other military maneuvers will, whenever possible, continue to be used for these purposes.

Planning for land use to meet military requirements is a dynamic process. As a result of ongoing downsizing, consolidation, and re-alignment, existing military lands will have to support missions currently being carried out at other installations. Improved technology and its application to warfighting will change land use requirements necessary for national security in the future. Accordingly, the management of DOD installations must ensure the flexibility necessary to meet these emerging and ever-changing requirements to assure the Nation's security.

Conservation: All DOD lands must be managed in accordance with Congressional intent, primarily fostering national security. Additionally, all DOD installations have a responsibility to be good stewards of the lands placed in their trust. This is accomplished at the installation level through the efforts of professional natural resources staffs that may include wildlife biologists, botanists, ecologists, foresters, biological technicians and other professionally trained personnel. These staffs assist their respective military commanders in carrying out their assigned national security missions while providing for the conservation and management of natural resources at each installation.

The Sikes Act: Among DOD natural resources stewardship responsibilities are those in 16 U.S.C. ∮670(a), "Conservation Programs on Military Reservations" (Sikes Act). This statute authorizes the Secretary of Defense to carry out a program of planning, development, maintenance and coordination of wildlife, fish and game conservation and rehabilitation on military reservations, under a cooperative plan mutually agreed to by the Secretary of Defense, Secretary of Interior, and the appropriate State agency. These cooperative plans must provide for:

(1) fish and wildlife improvements or modifications,

(2) range rehabilitation where necessary for support of wildlife,

(3) control of off-road vehicle traffic, and

(4) specific habitat improvement projects and adequate protection for species of fish, wildlife, and plants considered threatened or endangered.

Department of Defense installations within the Planning Area have developed, or are developing, these cooperative plans, known as Integrated Natural Resources Management Plans ("INRMP") for the lands under their jurisdiction. These plans describe and set forth proposed courses of action, establish priorities, and provide for installation land management, fish and wildlife management, and outdoor recreation. Each military service has regulations and policy to determine the content and structure of the installation's INRMP. Installations regularly review and update their INRMPs and revise them as necessary.

Current Conservation Practices: If a proposed military construction project or other land use is expected to significantly impact a known sensitive species or sensitive habitat, efforts to mitigate these impacts are undertaken. Environmental impacts, including cumulative impacts, are evaluated under

the requirements of NEPA. Efforts are made to avoid sensitive species or habitats. If avoidance is not possible, efforts are made to minimize land disturbing activities.

Environmental planners, natural resources personnel, and other related disciplines form inter-disciplinary teams to provide technical input to minimize environmental degradation. All aspects of projects are reviewed. Every attempt is made to limit adverse impacts to biological resources. If adverse impacts are unavoidable, efforts to mitigate the impacts are sought through the agency having regulatory authority over the species impacted.

Other sound ecological conservation practices voluntarily undertaken by DOD include captive breeding programs, plant propagation, exotic species eradication, predator control for threatened and endangered species, land rehabilitation, purchase of adjoining rare or sensitive habitats, wetland and stream rehabilitation, and many other biological enhancement projects. Funding for mitigation proposals are included in the planning process and, in the case of construction projects, are included in the project appropriation budget. Projects are not executed unless required mitigation funds have been appropriated and received by the installation.

Mojave Desert Ecosystem Policy: On April 28, 1995, the Deputy Under Secretary of Defense (Environmental Security) established the following guidelines for DOD in participating in regional interagency agreements:

> (1) The overriding mission of DOD is the protection of the national security of the United States, and DOD activities in the Mojave Desert are vital to fulfillment of that mission.
>
> (2) Any cooperative agreement or plan in which DOD formally participates should recognize that such agreements and their products will not detract from the DOD national defense mission, now, or in the future.
>
> (3) Military lands cannot be set aside as perpetual environmental preserves. While conservation is, and shall continue to be, practiced on installations, flexibility must be maintained to adapt the defense mission to political and technological development.
>
> (4) Military lands cannot be used for the mitigation of impacts of actions occurring off the installation that affect the environment.
>
> (5) DOD shall integrate the management of natural and cultural resources with the military mission within the Mojave Desert Ecosystem.

DOD Participation in the West Mojave Plan: DOD encourages regional interagency agreements and participation in non-DOD ecosystem management approaches. Accordingly, local commanders may participate, consistent with DOD policy guidelines, in the West Mojave Coordinated Management Plan. DOD installations are participating in the Plan with the intent of managing DOD lands in accordance with DOD policies and installation INRMPs which will incorporate, to the extent practicable, the principles of the West Mojave Coordinated Management Plan.

DOD lands will provide for the accomplishment of the DOD national security mission while providing

the needed flexibility to meet changing mission requirements and comply with the conservation requirements of the Sikes Act, FESA, the National Historic Preservation Act and related statutes. The installation's INRMPs will address the levels at which areas on the installation can be managed for natural resources. These plans will be coordinated and implemented in conjunction with the USFWS and CDFG.

Threatened and Endangered Species Consultations: All of the DOD installations in the Planning Area are engaged in FESA Section 7 consultations regarding actions affecting threatened and endangered species found on the installations. The degree and scope of consultations have varied, depending on the species involved and the nature of the action, over many operational and maintenance requirements.

Some installations have a programmatic FESA Section 7 consultation completed, and are required to consult on specific actions listed within the biological opinion provided by the USFWS. Existing Biological Opinions rendered from previous Section 7 consultations have been or will be incorporated into the installation's INRMP.

POLICIES FOR SPECIFIC LAND USES

Policies applied by the participating agencies concerning three land uses warrant special attention, given their importance for threatened and endangered species management. These land uses include the following: (1) Solid waste disposal; (2) Road maintenance; and (3) Shooting restrictions. A detailed description of each is presented below.

A description of land acquisitions, conservation easements and other forms of mitigation and/or compensation which have been applied in the planning area can be found in Appendix A.2.

Solid Waste Disposal

Solid waste produced in the planning area is collected by private contractors and deposited in the numerous landfills located throughout the region. Many of these landfill sites have been located on BLM-administered public lands in the past. BLM is currently in the process of transferring the full title of these to the counties; following transfer, BLM will have no management responsibility or liability for these sites in the future.

Landfills are described below by the county in which they are located. Descriptions of each landfill include: size and location, presence of septage ponds and fencing, the method of covering the working face, litter control measures, and planned future use of the site as a landfill. Inactive sites are included on the list. This list is not exhaustive; it is a representative sampling. It should be noted that there is illegal dumping occurring in the desert, including at many of the now 'closed' dump sites.

Inyo County

There are no landfill sites located in the southern portion of the county. The Olancha landfill has been closed and converted to a transfer station. There is also a transfer station at Homewood Canyon which

serves the Valley Wells area.

Kern County

Boron Disposal Area -- It is 21 acres in size. The facility is limited to a landfill; there are no septage ponds. The site is completely fenced with chain-link for security; however, dogs and other scavengers manage to get into the area by digging under the fence. Ravens are present. The working face is covered daily with a minimum of 6 inches of compacted soil. Litter is controlled with a high transportable fence which is located near the working face. Litter pick-up crews are deployed after heavy winds. The estimated closure date is September 2005.

Mojave/Rosamond Disposal Area - - It is 40 acres in size. Facilities are limited to a trench type landfill; there are no septage ponds. The site is completely fenced with chain-link and hog wire for security. Ravens are present. The working face is covered daily with a minimum of 6 inches of compacted soil. Litter is controlled with a high transportable fence which is kept near the working face. Litter pick-up crews are deployed after heavy winds. The estimated closured date is April 2015.

Ridgecrest Disposal Area - - It is 121 acres in size. Facilities are limited to a trench type landfill; there are no septage ponds. The site is completely fenced with chain-link and hog wire for security. Dog and other scavengers are able to get in under the fence at certain locations, but ravens are not a major problem. The working face is covered daily with a minimum of 6 inches of compacted soil. Litter is controlled with a high transportable fence which is kept near the working face. Litter pick-up crews are deployed after heavy winds. The estimated closure date is February 2013.

Los Angeles County

Palmdale Landfill - - It covers 65 acres, of which 57 are available. The site serves the City of Palmdale and the surrounding unincorporated county area. The site includes a landfill with no septage ponds. It is fenced with six foot chain-link for security. No scavenger problems of any type have been noted. The working face is covered daily with a minimum of 6 inches of compacted soil or with a special cover made of a lightweight fibrous material and anchored with tires. Litter control is provided by a high net fence and portable units located near the working face.

Lancaster Landfill -- It will cover 100 acres when expansion is approved. This site serves the City of Lancaster and the surrounding unincorporated county area. The site includes a landfill with no septage ponds. It is fenced with six foot chain-link for security. Ravens have been noted in the area but not in substantial numbers. The working face is covered daily with a minimum of 6 inches of compacted soil or with a special cover made of a light weight fibrous material and anchored with tires. Litter control is provided by a high net fence and portable units located near the working face. The site is scheduled to be closed in 1999. An EIR is pending to expand the site.

San Bernardino County

Apple Valley - - It is 160 acres in size, and consisted of 120 acres of BLM-administered public lands and 40 acres of county-owned land (the County received full title in 1997). The facility includes a landfill for solid waste and three ponds for septage waste. The boundary is partially fenced with hog wire and chain-link for security, a fence which is not adequate to keep scavengers out of the area.

Ponds are not covered and may attract ravens. The working face was covered daily with a minimum of 6 inches of compacted soil. Past inspections have noted a lack of litter control at the site. Closed as of 2/98.

Barstow Landfill - - It is 640 acres in size, and consists of 480 acres of BLM-administered public lands (designated as critical habitat for the tortoise) and 160 acres County-owned land. The facility includes a landfill and two septage ponds. The active landfill area is fenced for security but the fence is not adequate to keep scavengers out. The ponds are not covered and may attract ravens. The working face is covered daily with a minimum of 6 inches of compacted soil. County plans call for this site to become a regional facility.

Hesperia Landfill - - It covers 80 acres. Facilities include a landfill but no septage ponds. The working face is covered daily with a minimum of 6 inches of compacted soil. Recent inspections reveal that the site was well managed. It is partially fenced with chain-link for security. Because of local wind characteristics, litter was not a problem. Closed as of 2/98.

Landers Landfill - - It is 640 acres in size, of which about 40 acres are currently being used. Facilities include a landfill and four septage ponds. The site is about 80 percent fenced with chain-link for security, which is probably not adequate to keep scavengers out. Recent inspections indicate a very large number of ravens at this facility compared to nine other landfills visited in San Bernardino County. The working face is covered daily with a minimum of 6 inches of compacted soil. The site is slated to become a regional facility in the future.

Phelan Disposal Site -- It is 80 acres in size. Facilities include a landfill; there are no septage ponds on the site. The active 16 acre area is fenced with six foot chain-link for security and to keep out scavengers. The working face was covered daily with a minimum of 6 inches of compacted soil. Closed as of 2/98.

Trona/Argus Disposal Facility - - It is 48 acres in size, of which 17 acres have been used to date. The facility includes a landfill area. There are no septage ponds on the site. The site is partially fenced with six-foot chain-link for security. This fence is not adequate to keep out scavengers. The working face is covered daily with minimum 6 inches of compacted soil.

Twentynine Palms Landfill - - It covers 71 acres. This is a BLM lease to the County (in Title Transfer Project). Facilities include a landfill and three septage ponds. The ponds were closed in 1995. The site is almost completely fenced with six feet chain-link for security. Scavengers can enter through the unfenced portion. The working face is covered daily with a minimum of 6 inches of compacted soil.

Yermo Landfill - - It covers 40 acres of which 16 are presently in use. The facility includes landfill. Septage ponds are closed. The area is partially fenced with six foot chain-link for security. Scavengers can enter through the unfenced portion. The site is open only one day a week. The working face is covered daily with a minimum of 6 inches of compacted soil. Recent inspections of the site revealed a litter control problem. The site is scheduled to be closed in 1998.

Victorville Landfill - - It covers 80 acres. This is a BLM lease to the County (in Title Transfer Project). The facility includes a landfill, borrow pit, and septage ponds. The entire site is fenced with six foot chain-link for security and to reduce entry by scavengers The septage ponds may be an

attraction for ravens. The working face is covered daily with a minimum 6 inches of compacted soil. There is illegal dumping outside of the fenced area and litter controls have, at times, not been effective. County plans call for this to become a regional facility.

A biological opinion (1-8-94-F-8) was issued for the 37.5 acre borrow pit located adjacent to the landfill. The terms and conditions are generally the same as for a mining operation, including the installation of tortoise proof fences to keep tortoises out of the pit area.

Morongo Landfill - - It covers 75 acres, of which 10 acres are presently in use. Facilities include a landfill; there are no septage ponds. The area is partially fenced with 6 foot chain-link for security. The working face is covered daily with a minimum of 6 inches of compacted soil.

Adelanto Landfill - - It covers 60 acres, of which 16 have been used. The site is currently inactive; however, it has not been capped and closed.

Red Mountain landfill - - This landfill is closed, and the site converted to a solid waste transfer station.

Lucerne Valley Landfill - - The landfill is closed and was capped in 1991. The site is now a solid waste transfer station.

Newberry Springs Landfill - - It covers about 40 acres. The site is inactive but has not been capped and officially closed.
Daggett Landfill - - It covers about 79 acres. The site is closed and capped.

Lenwood/Hinkley - - It covers 160 acres. The site is closed.

Kramer Junction Disposal Site - - This was a trash burning site. It closed in 1973.

Road Maintenance

Road maintenance includes the repairing and resurfacing of paved roads, and the grading and compacting of dirt roads. Dirt roads are graded two or more times a year and impact the desert tortoise and habitat. The slope gradient currently used is a hazard for the desert tortoise who cannot climb this slope easily. There have been no biological opinions or consultations for road maintenance by the counties.

Inyo County

There are less than 10 miles of dirt road maintained by the county in the planning area (no tortoise critical habitat in County). Most of these are located north of desert tortoise habitat. They include a number of short segments east and west of Highway 395 and a few short routes serving the Valley Wells area.

Standards for Grading Dirt Roads: Dirt roads are graded only when washouts occur or as needed. Roads are graded to a width of 24 feet usually with two passes. The windrow is graded to one side and stored to be used to replace fine material blown away.

Incidental Take Authorizations for Road Maintenance: None

Wildlife Conservation Measures: None except that operators have been made aware of the need to protect the Mohave ground squirrel and its habitat.

Kern County

There are 11 miles of county maintained roads in desert tortoise critical habitat. These occur in Fremont Valley. All of these roads are paved and maintenance is limited to road repairs. Maintained dirt roads total approximately 36 miles and include the Redrock-Inyokern Road, the Last Chance Well Road, the Bowman Road, and the county portion of the Mojave Randsburg Road.

Standards for Grading Dirt Roads**:** The roads are graded twice in the spring when there is moisture in the soil and trucking in water is not necessary. The operator makes two to three passes, and works material to the center. No windrow (berm) is left at the shoulders. Over time, dirt roads have become depressed below the natural grade in many places (for example, the Red Rock/Inyokern Road). There are no plans to fill and bring back to natural grade depressed road segments or to pave any existing dirt roads. The average road is 24 feet wide.

Incidental Take Authorizations for Road Maintenance: None.
Desert Tortoise Conservation Measures:

Training of operators in the treatment of desert tortoise -- No training.
Handling of tortoises found on the road during grading -- No procedure is given to operators. It is not known how they deal with the situation.
Checking for tortoises under parked vehicles -- No procedure is given to operators.
Treatment of injured or dead tortoises found during road maintenance operation -- No procedure is given to the operators.

Los Angeles County

There is a total of 198 miles of dirt roads in the county maintenance system for North Los Angeles County. About thirteen miles are located in desert tortoise critical habitat in the Hi Vista area adjacent to Edwards AFB.

Standards for Grading Dirt Roads: Dirt roads are graded at least once in the spring after the rains. About 100 miles of moderately traveled roads are graded twice a year. The operator makes three passes. Water with a bonding chemical is added to the road bed to reduce dust. Material is graded to the center and no windrows are left on the shoulders. All roads are maintained above natural grade with a two percent slope from the crown to the outer edge so that the surface will drain to the surrounding desert. When the road surface drops six inches below natural grade, fill material is brought in to restore natural grade. The average road is 24 feet wide.

Incidental Take Authorizations for Road Maintenance: None

Desert Tortoise Conservation Measures:

Training of operators in the treatment of desert tortoise -- No training.
Handling of tortoises found on the road during grading -- No procedure is given to operators.

It is not known how they deal with the situation.
Checking for tortoises under parked vehicles -- No procedure is given to operators.
Treatment of injured or dead tortoises found during road maintenance operation -- No procedure is given to the operators.

San Bernardino County

There are about 80 miles of dirt roads in the county maintained system in the planning area. About one-half of this amount is located in desert tortoise critical habitat. Roads include the Helendale Road, Copper City Road, the Hinkley Road, and the Camp Rock Road.

Standards for Grading Dirt Roads: Dirt roads are graded four to five times a year depending on conditions. The operator makes seven passes to work the windrows to the center. No windrows are left at the edge or on the shoulder. Depressed sections of dirt roads may be filled with borrowed material. This is not, however, practical in sandy areas because the material is not stable. Helendale, Copper City and the Camp Rock Roads are depressed with steep side cuts over much of their length. The average road is 24 feet wide. There are only plans to surface Helendale Road.

Incidental Take Authorizations for Road Maintenance: None

Desert Tortoise Conservation Measures:

Training of operators in the treatment of desert tortoise -- Operators are given BLM material on treatment of the desert tortoise and management has conducted informal (tailgate) sessions to discuss the tortoise.

Handling of tortoises found during maintenance operations -- If possible, the operator will pass by the tortoise and allow it to clear the road on its own. If necessary, the operator will move the animal in accordance with instructions.
Checking for tortoises under parked vehicles -- Operators are instructed to check under parked vehicles for tortoises and for snakes.
Treatment of injured or dead tortoises found in the road during road maintenance operations None have been reported. It is assumed that they would be moved off the road.

State Highway Maintenance

A Biological Opinion was approved for maintenance of state highways located in San Bernardino and Riverside Counties (1-8-94-F-40 - programmatic plan with USFWS). The routine maintenance and repair activities conducted by the California Department of Transportation in desert tortoise habitat are grouped into the following project category types. Terms and conditions applied to each type of project are summarized in Table 9.

Type 1: Highway Rehabilitation, and Drainage and Safety Standards -- resurfacing existing pavement, grading shoulders and road embankments, widening existing sub-standard shoulders to a standard of 10 feet, grading existing roadside channels, installing new roadside channels and drainage devices, and extending culverts. Areas for equipment and material storage and spoils disposal may be required.

Type 2: Check Dam, Catch Basin, Stilling Basin, Drainage Improvement -- excavation of soil within

the wash or channel and replacement of slope protection, construction of dikes to direct the flow of water, new erosion control devices adjacent to existing culverts or bridges.

Type 3: Widening of Two-lane Highways for Turn Pockets, Acceleration/Deceleration Lanes, Passing Lanes, Two-way Left-turn Lanes, Intersection Widening, and Curve Realignment

BLM Route Maintenance

The BLM maintains both user established routes (see BLM's Desert Access Guide Maps) and standard roads in the West Mojave area. Roads maintained by BLM provide access to BLM management areas including camping and recreation areas. Vehicle routes established by users are, for the most part, located in popular recreation areas and motorized vehicle open areas. The *BLM Maintenance Management System Road Site Summary Report*, dated April 15, 1997, addresses a list of roads which generally corresponds to numbered routes shown on the BLM Desert Access Guides.

Maintenance is provided by contract and by BLM personnel and equipment. The 1993 contract for road grading included the following standards:

> 1. Shall be graded to the typical as shown in the drawing [road width 20 to 30 feet, crown with 3% slope to natural grade]. The surface shall be smooth, uniform and free of chuckholes, washboards and ruts. Excess material shall be spread over the road: no windrows are to be left on the shoulders; and,
>
> 2. Fill and embankment material shall be obtained from a government designated source. The borrow pit shall be left clean with no litter and with cut slopes rounded at the top and sloped 4:1.

Requirements for protection of desert tortoises were not included in the contract and no incidental take was authorized.

A programmatic Biological Opinion for Road Maintenance and Rehabilitation of Disturbed Areas in The Ridgecrest Area (1-9-95-F-32) was recently issued by USFWS which addressed road maintenance by BLM. It imposes the following terms and conditions:

> Surveys -- When required, surveys will be conducted by a qualified biologist.
>
> Worker Education -- Appropriate instructions and briefings must be given to all personnel involved in road maintenance.
>
> Monitor -- A monitor is to accompany heavy equipment when working in desert tortoise habitat during active period (March 1 to October 1). The monitor should walk in front of the equipment and remove animals from harm's way.
>
> Avoid Roadbed Lowering -- The operator should minimize lowering of the road bed when grading to avoid building up a tall berm that may inhibit movement of desert tortoises. A berm higher than 12 inches and/or with slopes greater than 30 degrees will inhibit desert tortoise movement and should be pulled back into the road bed.

Speed Limits -- Driving speed should not exceed 30 miles per hour, and operating speed should not exceed 5 miles per hour.

Parked Equipment -- All parked equipment should be inspected underneath immediately prior to moving it. Tortoises under vehicles and equipment shall either be moved in accordance with appropriated procedures, or the operator shall wait until the animal leaves of its own accord.

Trash -- Trash shall be contained and removed so as not to attract ravens.

Since September 1996, approximately 50 vehicle route miles have been graded in the Jawbone ACEC and in the Spangler OHV area. Grading is accomplished with a metal drag pulled behind a small tractor. Routes are graded to a width of approximately 12 feet. No recent grading has been done in desert tortoise critical habitat.

Table 9 Highway Maintenance Project Terms and Conditions

TERMS AND CONDITIONS	TYPE 1	TYPE 2	TYPE 3
Worker Education -- To be provided by a qualified biologist.	X	X	X
Establish Clearly Defined Work Areas -- The work area will be cleared of tortoises by a qualified biologist prior to work.	X	X	X
Inspect Beneath Parked Vehicles -- Do so to remove tortoise before vehicles are moved.	X	X	X
Designate Field Contact (DFC)-- The DFC oversees compliance with the terms and conditions and to coordinate with USFWS and CDFG. The DFC shall have the authority to halt operations if conditions are not being met.	X	X	X
Handling Tortoises -- To be done only by qualified biologists authorized by USFWS.	X	X	X
Open Trenches, Holes, Excavations -- Inspect a minimum of three times a day by an authorized biologist.	X	X	X
Cross-country Travel -- Prohibited except as necessary for project related activities.	X	X	X
Firearms or Pets -- Not allowed in the work area.	X	X	X
Fencing -- At discretion of the biologist, a work area may be fenced before work is commenced to protect tortoises.	X	X	X
Annual Report -- This is required to, among other things, report the actual acreage disturbed.	X	X	X
Disturbance -- Confine disturbance to the smallest area practicable and delineate work area boundary with flags.		X	
Limitations -- Construction, maintenance, and repair activities greater than 100 feet from the facility or road being maintained and disturbance of more than one acre per activity is beyond the scope of this consultation and will require contact with the USFWS field office.		X	
Trash -- All food-related trash items shall be placed in a container which precludes entry by wildlife, such as common ravens and coyotes. Workers are not to feed animals.	X	X	X
Survey -- The entire project area shall be surveyed for desert tortoises and their burrows before start of ground disturbing activities. All found tortoises shall be removed.		X	X
Identification -- All tortoises found shall be marked for future identification.		X	X
Storage of Waste -- Grindings and asphaltic-concrete waste shall be stored within previously disturbed areas and an minimum of 150 feet from any culvert, wash, or stream crossing.	X		X

Routes Maintained by Individuals

Roads to private land, mining operations, and livestock allotments are usually maintained by individual property owners and operators. No permits from local government or authorization by BLM are required for grading and maintaining existing route segments located on private land. Most of the work is performed by local heavy equipment contractors who may or may not be aware of the desert tortoise listing.

Shooting Restrictions

The discharge of firearms on private land in unincorporated areas is controlled by county ordinances. Most cities in the west Mojave are closed to the discharge of firearms. State parks, Joshua Tree National Park, and some BLM campgrounds are closed to hunting and shooting.

Where discharge of firearms is permitted in unincorporated areas, there are general prohibitions with respect to shooting near or across highways, on the private land of others, near inhabitant buildings, at water tanks and signs, at CDFG-maintained small and big game guzzlers or at mobile homes without permission of the resident.

Inyo County

There are no county restrictions on the discharge of firearms on private land within the unincorporated county area. The sheriff''s office enforces the state penal code with respect to general use of firearms, and the CDFG codes with respect to hunting and shooting.

Kern County

A map maintained by the County of Kern, titled *No Shooting Areas, Kern County, California*, identifies three restricted shooting categories in eastern Kern County. All other unincorporated areas are unrestricted or open to shooting year round with any legal firearm.

- Closed to all firearms -- This includes the cities of Ridgecrest and California City; and the unincorporated communities of Boron, Rosamond, and Mojave;

- Closed to firearms usage except shotguns to exterminate animals destructive to crops and property -- This includes the Cantil area and unincorporated private land located west of Edwards Air Force Base. These areas have been plagued by packs of wild dogs. Property owners are allowed to shoot these animals on their property.

- Military Bases -- Edwards Air Force Base (specifically posted "No Shooting Area").

The map does not include closure to shooting at Red Rock State Park, or restrictions on the use of firearms at the DTNA and in Fremont Valley.

Los Angeles County

A map maintained by the County of Los Angeles titled *Los Angeles County Firearms Closure Areas* identifies a number of firearm discharge categories only two of which are relevant to the planning area.

- Discharge of any firearms prohibited -- This includes the cities of Palmdale and Lancaster and surrounding unincorporated communities; Saddleback Butte State Park and other local and state parks; and Edwards Air Force Base.

- Areas in which the discharge of any firearm with a range of one-half mile or more is prohibited. Only shotguns and archery are permitted in these areas.

There are no areas generally open to shooting.

San Bernardino County

A map maintained by the County portrays five categories of shooting restrictions for the planning area. (The map does not distinguish between city and county regulations.) Designations on the county map include the following:

- Closed to any type of shooting year round.

- Closed to all shooting except shotguns firing shot shells no longer than one-half the diameter of the bore**,** and bows and arrows. Night shooting prohibited. Most of the unincorporated area in the Victor and Lucerne Valley area south of Barstow, the Morongo Valley, and Yucca Valley are within this category.

- Shooting of firearms permitted for legal hunting and target shooting . Night shooting prohibited**.** A narrow east-west corridor from the community of Joshua Tree to the east boundary of the planning area is within this category.

- Shooting of firearms (all legal types) permitted for legal hunting only. Night shooting prohibited. This restriction covers the eastern slope of the San Bernardino National Forest.

- Open to year round shooting with all types of legal firearms, includes night shooting. This category covers most of the area north of Barstow and most of the desert tortoise critical habitat located in the planning area.

Cities / Towns

The cities / town of Adelanto, Apple Valley, Barstow, California City, Hesperia, Lancaster, Palmdale and Victorville are closed to any type of firearm discharge. The Town of Yucca Valley is restricted to the use of shotgun for hunting only. The City of Twentynine Palms is limited to hunting and target shooting.

Bureau of Land Management

County firearm restrictions apply to BLM-administered public lands unless shooting restrictions are established for specific areas. BLM has established shooting restrictions on public land in the following areas:

- No discharge of firearms at any time -- El Mirage OHV area, and areas within ½ mile of the campground at Afton Canyon.

- Shooting limited to legal hunting in the fall and winter, shotgun only for upland game -- Desert Tortoise Natural Area and the Rand Mountain - Fremont Valley area (desert tortoise critical habitat).

- Shooting limited to hunting in posted areas with shotguns only -- Stoddard Valley OHV area. The Johnson Valley and Rasor OHV areas will come under this shooting restriction when sign posting is completed.

- BLM regulates the type of shooting targets, which must be paper or metal.

CHAPTER III
MAMMALS

ARGUS MOUNTAINS KANGAROO RAT

Regional Summary of Argus Mountains Kangaroo Rat

Fed: None **State**: None	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Species' entire range is within the WMPA, in the vicinity of Junction Ranch in the Argus Mountains and on China Lake NAWS.	Follows a strongly seasonal pattern of reproduction, with a peak in early spring.	Foraging: Forages on seeds of forbs, shrubs, and grasses and on green leaves of forbs. Habitat Preferences: Based on nearby subspecies, it is likely that this species inhabits creosote bush scrub, saltbush scrub, Joshua tree woodland, and juniper woodland; inhabits areas of course sand and gravelly soils. Seasonal Activity: Species does not hibernate although it may reduce above-ground activity during the winter months.
Jurisdictional Occurrence: China Lake NAWS; BLM; CDFG.		
WMPA Locations: Argus Range (Junction Ranch), China Lake NAWS; Argus Range Wilderness (suitable habitat); Great Falls Basin ACEC (suitable habitat); Indian Joe Springs ER (suitable habitat).		
Committed Long-term Management: Argus Range Wilderness (suitable habitat); Great Falls Basin ACEC (suitable habitat); Indian Joe Springs ER (suitable habitat).		
Threat Analysis: Breeding, foraging, hibernating, individuals: Given its narrow range, it is vulnerable to human-related impacts and natural stochastic events; threats include wild horses and burros which may degrade the habitat. Population trends: There are no recent data to determine distribution and status of this species.		

Major Information Sources: David Laabs, Biosearch Wildlife Surveys, Box 8043, Santa Cruz, California 95061; BLM - Barstow and Ridgecrest Resource Area staff.

CALIFORNIA LEAF-NOSED BAT

Regional Summary of California Leaf-nosed Bat

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Appears to be confined to lowland Sonoran Desert habitat below 900 meters; totally dependent on caves or mines for maternity, mating, and overwintering sites, although occasionally found night roosting in buildings or bridges; the largest roosts are found east and south of the WMPA in the Colorado Desert below 900 meters and usually in mines in close proximity to desert wash vegetation.	Females congregate in the spring and summer in maternity roosts of 100 to 200 bats; females bear a single young between mid-May and early June; maternity colonies disband in late summer once the young are independent; males may occupy "display" roosts in September and October where they are visited by females for mating; the total gestation period is nine months, with "delayed development" occurring for the first several months; only about 20 maternity colonies (and a similar number of winter roosts) are known, with the largest colonies found along the Colorado River.	Roosting: May form large, mixed sex aggregations of up to 2,000 bats in winter; does not hibernate. Foraging: Purely insectivorous, foraging low over desert wash vegetation, often within one meter of the ground; diet consists primarily of large moths, butterflies, grasshoppers, and katydids; appears to require desert wash vegetation for foraging.
Jurisdictional Occurrence: (1) JTNP; (2) San Bernardino County; (3) Twentynine Palms Marine Corps Base; (4) BLM.		
WMPA Locations: (1, 2) Pinto Mountains - Alaska Gulch (significant hibernation and maternity roost); (3) Lead Mountains; (4) Pinto Mountains (significant maternity roost).		
Committed Long-term Management: (1) JTNP.		
Threats Analysis: Breeding, foraging, hibernating, individuals: Primary factors leading to the decline of this species are roost disturbance, urban and rural development, destruction of foraging habitat, closure of mines, intentional vandalism, and renewed mining; uncovered cyanide ponds and pooled solution on heap leech pads can poison bats; their limited distribution, restrictive roosting requirements, and formation of relatively large roosts makes this species especially vulnerable. Population trends: Currently appears to be restricted to the eastern portion of its historic range; whereas it was once found in western San Diego County, northwest Los Angeles County, and western Riverside County it is currently only found in desert areas to the east.		
Management Policies: BLM: IM#CDD-85-134: Closure of Mine Entrances Allowing Bat Use; and IM#93-291: Use of Caves Important to Bats.		

Major Information Sources: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

FRINGED MYOTIS

Regional Summary of Fringed Myotis

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Although records exist for the high desert and east of the Sierra Nevada, the majority of known locations are on the west side of the Sierra Nevada; typically found at elevations higher than those in the WMPA; occupies a wide range of habitats, from desert scrub to coniferous forests, including redwood and giant sequoia habitats.	None are known from the WMPA; this is a colonial species with nursery colonies in California typically numbering 10 to 20 adults, although one colony in the San Bernardino Mountains contained more than 200 individuals, and another is reported to have had between 1,000 and 2,000 bats; mating is in the fall, with ovulation, fertilization in the spring, and young produced (one per year) during latter June and early July (expected to be earlier in California); museum records offer documentation for only six maternity colonies.	Foraging: Prey includes beetles, moths, harvestmen, crickets, crane flies, spiders, bugs, etc. Seasonal Activity: Not expected to be migratory and may be active intermittently throughout the year; has been found on the coast (San Francisco Bay and north) hibernating in buildings and mine tunnels. Roosting: Most known roosts are in rock crevices, caves, buildings, or mines; the majority of roost sites in California have been in buildings; may also use hollow trees.
Jurisdictional Occurrence: (1) JTNP.		
WMPA Locations: (1) JTNP (Barker Dam).		
Committed Long-term Management: (1) JTNP.		
Threats Analysis: Breeding, foraging, hibernating, etc. individuals: The species seems to be extremely sensitive to disturbance at roost sites and to human handling; threats include closing old mines, renewing mining in historic districts, restoration of historic buildings, timber harvest practices in certain areas, scientific collecting; within the WMPA, potential threats would be human entry or disturbance of roost sites in mines and buildings. Population trends: Although the status has not been systematically investigated, museum records suggest that it is a wide-spread species and rare where it occurs; of six known maternity colonies, only two of these are still being used; the limited available data suggest serious population declines.		

Major Information Source: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514.

LONG-LEGGED MYOTIS

Regional Summary of Long-legged Myotis

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Occurs over the western third of the United States; in California occurs from the coast to the upper elevation areas, is absent from the southeastern portion of the state; typically occurs at higher elevations than those found in the WMPA; desert records are from the Providence, New York, and Kingston Mountains; the only known roost in the WMPA was in a building at Coso Hot Springs.	Mates in the fall and/or winter, giving birth to a single young in late spring or early summer; described by one researcher as "...forming large maternity colonies of several hundred females."	Seasonal Activity: Species probably migrates altitudinally. Foraging: Feeds primarily on moths, and occasionally on soft-bodied invertebrates and small beetles. Preferred Habitats: Most records are from relatively high elevations; found primarily in coniferous montane forests, and is likely the most forest-dependent of any of the California *Myotis* species; mostly found between 6,500 and 9,800 feet elevation; roosts in abandoned buildings, mines, and rock crevices; may roost primarily in trees, especially large diameter, coniferous snags or live trees with lightening scars.
Jurisdictional Occurrence: China Lake NAWS.		
WMPA Locations: roosting in the historic building at Coso Hot Springs on China Lake NAWS (pregnant females).		
Committed Long-term Management:		
Threat Analysis: Breeding, foraging, hibernating, individuals: Given their upper elevation preference, timber harvest is probably the biggest threat; pesticide spraying is a documented cause of mortality. Population trends: No maternity roosts have been found in California in the past 40 years.		

Major Information Source: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514.

MOHAVE GROUND SQUIRREL

Regional Summary of Mohave Ground Squirrel

Fed: None **State**: Threatened	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Ranges from Palmdale (southwest), to Lucerne Valley (southeast), to Coso Range (northwest), and to Avawatz Mountains (northeast). Virtually the entire range of the species is within the WMPA. Substantial populations occur in Indian Wells Valley, Kramer Hills, Edwards AFB, China Lake NAWS, southern Sierra Nevada canyons, and portions of Fort Irwin NTC.	Sex ratio is consistently female biased, with ratios as high as seven females per male; species is solitary except during breeding; juveniles begin to establish territories during about mid-May.	Seasonal Activity: Emerges from dormancy as early as January, but more typically in mid-February or March; males emerge ahead of females and establish territories; aestivation generally begins in July or September but may begin as early as April or May during drought years; one male juvenile was observed to move 3 miles at the Coso study site. Foraging: Feeds on leaves and seeds of plants; perennial plants are used extensively if annuals are not available; species most often used at the Coso study area included spiny hopsage, winterfat, and saltbush; insects constitute a small but regular part of the diet; forage throughout the day following a period of basking in the morning. Habitat Preferences: Generally occurs in flat to moderate terrain; observed in habitats dominated by creosote bush and burrobush with the following occurring at lower frequencies: winterfat, Anderson's boxthorn, cheesebush, desert goldenhead, and Cooper's goldenbush; Joshua tree is often a component; in saltbush scrub, one or more of the following are dominant: Four winged saltbush, Allscale, Spiney Saltbush, Shadscale.
Jurisdictional Occurrence: BLM; Inyo County; Kern County; Los Angeles County; San Bernardino County; Adelanto; Apple Valley; Barstow; California City; Hesperia; Lancaster; Palmdale; Ridgecrest; Victorville; Indian Wells Valley Water District; Ca. State Lands Commission; Ca. State Parks; CDFG; China Lake NAWS; Edwards AFB; Fort Irwin NTC.		
WMPA Locations: Helendale, Mojave River, Sierra Nevada (Freeman Canyon, Bird Spring Canyon, Jawbone Canyon), Olancha, Fort Irwin NTC (Avawatz and Granite Mountains), Barstow, Palmdale/Lancaster, Victorville/Hesperia/Apple Valley, Indian Wells Valley, Kramer Hills, Edwards AFB, China Lake NAWS, California City, Ridgecrest, DTNA, Mojave Fishhook Cactus ACEC, Mojave Saltbush UPA, Piute Butte, Rainbow Basin ACEC, Rand Mtn / Fremont Valley Mgmt. Area, Sand Canyon ACEC, Big Rock Wash, Alpine Butte, Lovejoy Butte, Antelope Valley Poppy Preserve, Saddleback Butte and Red Rock Canyon State Parks.		
Committed Long-term Management: DTNA; Antelope Valley Poppy Preserve, Saddleback Butte and Red Rock Canyon State Parks; Rainbow Basin ACEC; Sand Canyon ACEC; Indian Joe Springs ER; West Mojave Desert ER.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Mortality high for squirrels in the first year; although observed in urban areas (e.g., Ridgecrest), unlikely the species persists for long in such areas; direct mortality results from habitat conversion, poisoning, vehicles, predation by cats and dogs; indirect mortality results from habitat fragmentation, changes in vegetation, genetic effects of small population sizes; off-highway vehicles may crush animals and burrows; grazing may affect species through direct competition and changes in vegetative structure. Population trends: Appears to be extirpated from Lucerne Valley and Rabbit Springs area, due to agricultural development and expansion of California Ground Squirrel in the area.		
Management Policies: An MOU between CDFG and BLM concerning small mining and other actions impacting up to five acres of MGS habitat. MGS stipulations are included within standard desert tortoise stipulations.		

Major Information Sources: David Laabs, Biosearch Wildlife Surveys, Box 8043, Santa Cruz, California 95061; BLM - Barstow and Ridgecrest Resource Area staff; Ca. State Park staff.

Local Jurisdictions

Los Angeles County:
Los Angeles County has records of MGS at the following SEAs: Big Rock Wash (#48) and Piute Butte (#54). The following SEAs have similar habitat descriptions and may have MGS populations: Alpine Butte (#52), Lovejoy Butte (#53) and Fairmont and Antelope Buttes (#57).

Barstow:
In the City of Barstow, the Mohave Ground Squirrel is most likely to occur in high and possibly medium biological resource areas.

Lancaster:
The City of Lancaster, in 1991, prepared a *Biological Assessment for Lancaster City and Planning Area: Relative Density Surveys for Desert Tortoise and Cumulative Human Impact Evaluation for Mohave Ground Squirrel Habitat* ("Lancaster Biological Assessment"). The report found that although Mohave ground squirrel (MGS) historically occurred in the Lancaster City area the density is extremely low. (Lancaster Biological Assessment at 22.)

California Department of Parks and Recreation

In Saddleback Butte the habitat is limited to a 2,000 acre area. This habitat is in good functioning condition with few disturbed areas. Studies have not been conducted to determine population densities and distribution. In Red Rock Canyon a number of MGS have been sighted at the south end of the park on the west side of Highway 14. There have been no recent studies conducted at the Antelope Valley Poppy Preserve.

MOJAVE RIVER VOLE

Regional Summary of Mojave River Vole

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Restricted to moist habitats along the Mojave River between Victorville and Helendale; habitat may also occur upstream towards Hesperia.	Peaks in reproductive activity correspond to times when food and cover are abundant; gestation is about 21 days with litter sizes between 1 and 11.	Habitat Preferences: Found in moist habitats including meadows, freshwater marshes, and irrigated pastures; ponds, irrigation canals, and alfalfa fields provide potential habitat; elevations of known localities range between 2,325 and 2,700 feet; constructs runways in grassy habitats hat lead to shallow burrows in friable soil. Seasonal Activity: Expected to be active year-round and during both night and day. Foraging: Expected to forage on stems and leaves of grasses and forbs, switching to grass seeds during drier times of year;
Jurisdictional Occurrence: San Bernardino County, Victorville, BLM, Edwards AFB, China Lake NAWS.		
WMPA Locations: Helendale, Victorville, Harper Dry Lake, Edwards AFB (near Piute Ponds and Rogers Dry Lake), China Lake NAWS, Mojave Narrows, Oro Grande.		
Committed Long-term Management: Harper Dry Lake ACEC, Afton Canyon ACEC (suitable habitat).		
Threat Analysis: Breeding, foraging, hibernating, individuals: The primary threat is destruction and fragmentation of habitat due to agriculture and urbanization; channelization of surface water and pumping of ground water may continue to be a significant threat; introduction of non-native plant and animal species, including salt cedar and House Mouse, respectively, may have an adverse affect on the species; concentrated off-highway vehicle impacts and other ground-disturbing activities remove vegetation and ground cover required by the species; Population trends: Current population status is unknown; the Mojave Narrows Regional Park is the only protected area within the historic core area of the subspecies.		

Major Information Sources: David Laabs, Biosearch Wildlife Surveys, Box 8043, Santa Cruz, California 95061; BLM - Barstow and Ridgecrest Resource Area staff.

NELSON BIGHORN SHEEP

Regional Summary of Nelson Bighorn Sheep

<table>
<tr><td>Fed: BLM Sensitive
State: Fully Protected</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Breeding</td><td>Foraging, hibernation</td></tr>
<tr><td>WMPA contains 16 populations as defined by mountain range complexes or portions thereof; three metapopulations in the WMPA are separated by fenced highways (I-15 and I-40), referred to as “south,” “central,” and “north Mojave Desert metapopulations;” primary habitat is on mountainous terrain above the desert floor that is visually open, steep, and rocky; inter-mountain areas of the desert floor through which sheep move are as essential to long-term viability as are the mountains themselves.</td><td>Peak of lambing occurs in late winter and spring (December through June); primary breeding season in the WMPA is between August and November, with a 174 day gestation period; females choose particularly steep, safe areas for bearing and initial rearing of lambs; areas of steep limestone are commonly preferred lambing areas; males often occupy much less precipitous habitats during the lambing season.</td><td><u>Foraging</u>: Feeds on a large variety of plant species, which varies seasonally and between locations; surface water is essential.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM; Twentynine Palms Marine Corps; Ft. Irwin NTC, China Lake NAWS, JTNP.</td></tr>
<tr><td colspan="3">WMPA Locations: Avawatz, Eagle Craigs, Argus, Bighorn, Cady, Newberry, Ord, Rodman, Bullion, San Bernardino and Little San Bernardino Mountains.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Afton Canyon ACEC; Argus Wilderness; Great Falls Basin ACEC; Newberry Mountains Wilderness; Rodman Mountains Wilderness; Bighorn Mountains Wilderness; Cady Mountains WSA; Bullion Mountains WSA; JTNP.</td></tr>
<tr><td colspan="3">Threat Analysis: <u>Breeding, foraging, traveling, individuals</u>: Fencing along highways, canals, and high density human habitation all adversely affect inter-mountain sheep movement; pneumonia contracted from domestic sheep probably has been the greatest factor in bighorn sheep declines in California; mountain lion predation to the east and northeast (Clarks, Kingstons, Granite Mountains) has been documented; deer are absent from most parts of the WMPA with bighorn sheep populations, except the San Bernardino Mountains, where mountain lion predation is recently documented and appears to be causing population declines; long drought periods have the potential to cause population declines; a disease syndrome where lambs die of bacterial pneumonia is not well known and apparently more of a problem during wet years; competition for limited water sources among bighorn sheep, cattle, and wild burros has been a problem, more so with burros than cattle. <u>Population trends</u>: Of the 16 populations historically occurring, five no longer occur, three have been reintroduced, and two have been augmented with sheep from another population.</td></tr>
<tr><td colspan="3">Management Policies: See below.</td></tr>
</table>

<u>Major Information Source</u>s: John D. Wehausen, White Mountain Research Station, 3000 E. Line St., Bishop, California 93514; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

Joshua Tree National Park

The following five areas managed by JTNP have habitat for the Desert Bighorn Sheep: Pinto Mountains, Little San Bernardino Mountains, Eagle Peak-Lost Palms drainage, Buzzard Springs-Eagle Peak tank areas, and Coxcomb Mountains. Pinto Mountain area is a transient area for the sheep. In 1986, the population was estimated at 25 individuals. The sheep also use the Little San Bernardino Mountains in Joshua Tree. This range becomes more arid to the east and the sheep population becomes less dense and it is used less frequently than the western portion (Rarefind 1996). In 1986, the population was estimated at 100 individuals; an increase in population numbers. Sheep disperse from the Eagle Peak-Lost Palms drainage and Buzzard Springs-Eagle Peak tank areas whenever forage and water conditions permit. The Coxcomb Mountains had a few individuals in 1986.

Bureau of Land Management

Habitat of Nelson Bighorn Sheep

The following areas managed by BLM have habitat for the Desert Bighorn Sheep: Afton Canyon ACEC, Argus Range Wilderness Area, Cady Mountains Wilderness Study Area, Great Falls Basin ACEC (watering areas), Newberry Mountains Wilderness, Ord Mountains, Rodman Mountains Wilderness, Bighorn Mountain Wilderness, and the north slope of the San Bernardino Mountains. The presence of secure travel routes linking these areas is important. Population trends are believed to be steady, although all known populations within the planning area are below minimal viable population levels.

Policies Related to Nelson Bighorn Sheep

Rangewide Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands, 1986. The principal goal is the recovery of desert bighorn through a program of inventory, on-the-ground projects, monitoring, and research.

Argus Range Wildlife Habitat Management Plan, 1986. This plan lists actions needed to protect and enhance habitats and populations of species in the area. The principal action is the reintroduction of bighorn sheep into this range.

Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska. Fish & Wildlife 2000. U.S. Department of the Interior, Bureau of Land Management. 1995. The principal goal is managing mountain sheep habitats using the concepts of ecosystem management.

Afton Canyon ACEC Plan; Rodman Mountains ACEC Plan; Great Falls Basin ACEC Plan; and, Desert Protection Act (allowing for habitat maintenance by CDFG and BLM).

Management of Land Uses in Relation to Long-term Conservation of Nelson Bighorn Sheep

1. Public Roads --Most areas of potential bighorn sheep habitat are closed except for three areas. There is very limited vehicular access to three springs (Austin spring, Mumford spring and North Ruth spring) which have very limited use by Bighorn. Some roads lead to mining operations in the Argus

Range foothills. Routes that dead-end or transverse bighorn sheep concentration areas will be targeted for closure and rehabilitation unless a form of authorized use is necessary.

2. Motorized Vehicle Use off of Public Roads--Vehicle use off public roads is prohibited on all public lands except open areas.

3. Recreation Activities--Rockhounds have repeatedly requested use of one (closed) road that travels immediately adjacent to a concentration (lambing) area within Afton Canyon ACEC.

4. Hunting and Shooting--A portion of the Great Falls Basin ACEC is closed to shooting. CDFG authorizes bighorn sheep hunting in specific mountain ranges, but no hunting is currently authorized within the planning area.

5. Mineral Exploration and Development --None currently within the Great Falls Basin ACEC or Afton Canyon ACEC. However, renewed iron mining has been proposed in sheep habitat just outside (east) of Afton Canyon ACEC. There are several mining operations in the San Bernardino Mountains. Avoidance of concentration areas is required. Additionally, if proposed operations are expected to impact seasonal use areas, a seasonal restriction may be required.

6. Sheep Grazing --Currently no domestic sheep allotments are permitted within 9 miles of occupied bighorn habitat. However, rams have been hit by vehicles on Highway 395, near the El Pasos, an area used by domestic sheep. There is a potential for contact with dispersing male bighorn in the Stoddard Ridge area. There will probably never be a 100% guarantee that bighorn will not come in contact with domestic sheep. The standard biological recommendation is a separation of 9 miles between domestic and bighorn sheep.

7. Wild Horses and Burros--Existing burro removal program both on BLM and China Lake Naval Air Weapons Station (NAWS) lands that contain bighorn sheep habitat. NAWS and BLM have removed over 3,000 feral burros from the Argus Range and continue to remove burros annually, but a small number remains. The goal for the area is to retain no burro population. All the springs receive some impact to the soil and vegetation from the remaining burros, though not at the historical level.

8. Wildland Fire Suppression--Historically fires were set to clear willows in Great Falls Basin ACEC and Argus Range. It was thought that there would be more surface water for the bighorn sheep to use. In reality, more water was probably lost due to evaporation than from the vegetation in the long-run.

9. Residential, Commercial, Industrial--Blocks of private land with residences in Homewood Canyon, within the Argus Range.

10. Disposal of Federal Land --One parcel with house exchanged for parcel at entrance to Indian Joe Canyon (mainly for the towhee). Lands recommended for disposal are reviewed by agency biologists for importance to bighorn sheep.

11. Water Diversion — Alpha Spring has water diversion; however, bighorn sheep are not commonly seen this far south in the Argus Range. There are several springs in the San Bernardino Mountains that are diverted; the majority of waters in the Ord Mountain area are used for livestock or have been

converted for used by livestock (i.e. Kane Spring and Willow Spring).

12. Cattle / Horse Grazing - - There are cattle allotments on most bighorn sheep habitat areas.

Proactive Programs of Benefit to the Long-term Conservation of Nelson Bighorn Sheep

1. Research Projects -- CDFG/Society for the Conservation of bighorn sheep have several research projects ongoing. BLM, CDFG, NPS and CR Briggs have a cooperative long term bighorn study going on in the Panamint Mountains, just outside of the planning area. Individuals from this herd have entered the WMPA.

2. Land Acquisition --Land at mouth of Indian Joe Canyon acquired in exchange for parcel with house. Consolidation of bighorn habitat has been identified as a goal.

3. Fencing--Christmas Spring, in the Argus Range, is fenced, other fencing is not needed with control of the burro population.

4. Habitat Restoration--Upper Ruth Spring, in the Argus Range, was barricaded from OHV use**.** Continued salt cedar control within riparian areas should restore optimum foraging/watering habitat for this species. The Afton Canyon Riparian Restoration Project has completed 300 acres of sheep watering/foraging access through the saltcedar removal program. Several springs located in the Ord and San Bernardino Mountains, are scheduled to be fenced in 1999 to exclude livestock but allow sheep use.

PALLID BAT

Regional Summary of Pallid Bat

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
In California the species occurs throughout the State, in a variety of habitats including low desert, oak woodland, and coastal redwood forests, up to about 3,000 meters in the Sierra Nevada; Occurs throughout the WMPA in areas of mountains and rocky outcrops.	Mates in the fall or winter, with females becoming pregnant in the spring and giving birth to one or two young in early summer; the young are not self-sufficient until the fall when the colonies disperse.	Roosting: Colonies typically contain 30 to 70 animals, which stay together from March-May through October; primarily a crevice roosting species; may roost in hollow trees more than previously realized; one of the species most predictably associated with bridges; congregates in night roosts in mines, buildings, and under bridges. Seasonal Activity: Does not migrate and is known to spend the winter hibernating close to summer roosts; wintering aggregations have not been found. Foraging: Flies close to the ground, landing to capture prey; the following prey items are known: scorpions, solpugids, beetles, orthopterans, and moths.
Jurisdictional Occurrence: (1) China Lake NAWS; (2) Twentynine Palms Marine Corps Base; (3) JTNP; (4) CDFG; (5) BLM; (6) Ca. State Parks.		
WMPA Locations: (1) Coso Mountains; Cactus Peak (significant maternity roost),Coso Hot Springs (significant maternity roost) (2) Lead Mountains (significant maternity roost);Benchmark 19 Mine (significant roost); (3) Pinto Mountains (significant hibernation and maternity roost); Barker Dam (4) Camp Cady WA (foraging habitat), Hinkley CE (foraging habitat), Indian Joe Spring ER (lactating females present in 1995 survey), and West Mojave Desert ER (foraging habitat); (5) Pinto Mountains (significant maternity roost), Newberry Mountains Wilderness (foraging habitat), Afton Canyon ACEC (foraging habitat), Cady Mountains WSA (foraging habitat), Black Mountain ACEC (foraging habitat), Harper Dry Lake ACEC (foraging habitat), Ord Mountains (foraging habitat), Mt. General Grassland (foraging habitat), Pisgah Crater RNA vicinity (foraging habitat), Superior Lakes (foraging habitat); Little Lake (significant maternity roost) (6) Red Rock Canyon State Park.		
Committed Long-term Management: (2) Benchmark 19 Mine (significant roost); the site has been gated and will be monitored; (3) JTNP; (4) Camp Cady WA; Indian Joe Springs ER, (5) Newberry Mountains Wilderness; Afton Canyon ACEC; Cady Mountains WSA; Harper Dry Lake ACEC (6) Red Rock Canyon State Park.		
Threats Analysis: Breeding, foraging, hibernating, individuals: Threats include destruction of buildings, removal of bats from public buildings, urban expansion, loss or disturbance to roosts, destruction of foraging habitat, closure of mines, renewed mining in historic districts. Population trends: declining in California; of six pallid bat roosts known in 1980, only one of these is still occupied; in the desert, except for a few colonies in mines, most bats appear to roost in rock crevices, making population estimates and trends difficult to assess.		
Management Policies: Ca. State Parks: Mine program - site evaluations and erecting of bat-friendly grates. The mine safety program includes restricting access into mine shafts, tunnels, and adits for bats. No rock climbing or rapelling permitted near bat roosting areas. BLM: IM#CDD-85-134: Closure of Mine Entrances Allowing Bat Use; and IM#93-291: Use of Caves Important to Bats.		

Major Information Sources: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff; Ca. State Parks staff; CDFG staff.

POCKETED FREE-TAILED BAT

Regional Summary of Pocketed Free-tailed Bat

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Known from Anza Borrego, Palm Springs, near Mecca, and Cargo Muchacho Mountains (southeastern Imperial County); only known location within the WMPA was Barker Dam in Joshua Tree National Park, where a single male was captured in 1977; expected to occur sporadically at lower elevations in the WMPA in the vicinity of cliffs and granite boulders.	Mating occurs in early spring, with young born between June and July; no colonies have been identified in the WMPA.	Seasonal Activity: Seasonal patterns are difficult to ascertain due to the limited number of records in California; apparently overwinters in San Diego County; during the warm season, they will exit after dark, while in California in November they leave while it is light. Foraging: Feeds primarily on large moths with crickets, grasshoppers, flying ants, froghoppers, and leafhoppers also taken. Habitat Preferences: Crevice-dwelling species occasionally found in caves and in buildings under roof tiles; all California roosts have been in crevices of cliff faces or granite boulders located at least 10 feet aboveground; in California, associated primarily with creosote bush scrub and chaparral habitats of Lower and Upper Sonoran life zones; occurs at lower elevations in a variety of plant associations, usually in proximity to roosting habitat in granite boulders, cliffs, or rocky canyons.
Jurisdictional Occurrence: JTNP.		
WMPA Locations: Barker Dam (JTNP)		
Committed Long-term Management: JTNP.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Alterations or disturbance of cliff habitats impact the species; spraying of pesticides in agricultural areas may adversely affect them. Population trends: Insufficient information is available to determine foraging ecology, seasonal movements, and population status in California.		

Major Information Source: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514.

SPOTTED BAT

Regional Summary of Spotted Bat

<table>
<tr><td>Fed: None
State: Species of Special Concern</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Breeding</td><td>Foraging, Hibernation</td></tr>
<tr><td>The majority of known locations are outside the WMPA; the species' distribution is very patchy, and it is relatively rare where it occurs.</td><td>Available data suggest that females roost singly and give birth to single young; births occur in June or early July; no maternity roosts are currently identified in the WMPA.</td><td>Roosting: Cliff faces at Red Rock Canyon provide preferred roosting habitat; roosts primarily in crevices in cliff faces; not generally viewed as cave dwelling, although several records exist. Foraging: Appears to be a dietary specialist feeding primarily on moths, although June beetles were found in the stomach contents of two individuals; generally forage 5 to 15 meters off the ground in large elliptical paths; do not appear to night roost, instead are active all night. Seasonal Activity: Not known if the species migrates; hibernates in the colder portions of its range, but has been found periodically active during the winter in Utah. Habitat Preferences: Found from 57 meters below sea level up to 3,230 meters elevation; habitats range from desert scrub to montane coniferous forests; collected most often in dry, rough desert terrain always near substantial rock cliffs; water is always near resident populations.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Ca. State Park; Inyo County; Twentynine Palms Marine Corps Base; China Lake NAWS; Kern County; Ridgecrest; BLM; CDFG.</td></tr>
<tr><td colspan="3">WMPA Locations: Red Rock Canyon State Park; Coso Peak; Inyokern; Twentynine Palms Marine Corps Base; Afton Canyon ACEC; Newberry Mountains Wilderness; Camp Cady WA.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Red Rock Canyon State Park; Afton Canyon ACEC, Newberry Mountains Wilderness; Camp Cady WA.</td></tr>
<tr><td colspan="3">Threats Analysis: Breeding, foraging, hibernating, individuals: Throughout California, threats include inundation of cliff walls following reservoir construction, highway projects in canyon areas, grazing in meadows, pesticide spraying, and recreational caving; recreational climbing is a threat in the WMPA; noise associated with mining and quarry activities may disturb roosting bats; foraging habitat in riparian areas may be adversely affected by overgrazing and trampling by livestock and burros. Population trends: Although the known range in California has recently expanded with continued study, only one of nine historic localities continues to support the species; not detected at 70 localities that offered apparently suitable roosting habitat; the reappearance at Red Rock Canyon may be in response to renewed flows of water following tamarisk removal.</td></tr>
<tr><td colspan="3">Management Policies: State Parks: Mine program - site evaluations and erecting of bat-friendly grates. Mine safety program includes restricting access into mine shafts, tunnels, and adits for bats. No rock climbing or rapelling permitted near bat roosting areas. BLM: IM#CDD-85-134: Closure of Mine Entrances Allowing Bat Use; and IM#93-291: Use of Caves Important to Bats.</td></tr>
</table>

Major Information Sources: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514; Ca. State Park staff; CDFG staff; BLM- Barstow and Ridgecrest Resource Area staff.

TEHACHAPI POCKET MOUSE

Regional Summary of Tehachapi Pocket Mouse

<table>
<tr><td>Fed: None
State: Species of Special Concern</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Breeding</td><td>Foraging, Hibernation</td></tr>
<tr><td>The northern portion of the range is within the boundaries of the WMPA; occupies the mountains along the fringe of the western Mojave Desert from Tehachapi Pass southwest towards Gorman, west as far as Cuddy Valley near Mount Pinos, and east along the Transverse Ranges to Elizabeth Lake.</td><td>They breed throughout the spring and summer.</td><td>Foraging: Other members of the species' group are nocturnal granivores, foraging primarily on seeds of grasses and annuals, but also on leafy plant material and insects. Seasonal Activity: Hibernation is expected. Habitat Preferences: Occupies native and non-native grasslands, Joshua tree woodland, pinyon-juniper woodland, oak savannah, chaparral, coastal sage, and open pine forests; also detected in rangeland and fallow grain fields; constructs burrows in loose, sandy soils at elevations between 3,500 and 6,000 feet.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM; Kern County; Ca. State Lands Commission.</td></tr>
<tr><td colspan="3">WMPA Locations: Oak Creek Canyon; Cameron Canyon; near Elizabeth Lake (historic).</td></tr>
<tr><td colspan="3">Committed Long-term Management:</td></tr>
<tr><td colspan="3">Threats Analysis: Breeding, foraging, hibernating, individuals: Not enough is known to determine the effects of grazing and wind energy development on the species; mineral extraction and urban development are incompatible; small, scattered populations are highly vulnerable to extirpation from natural and human-related events. Population trends: Very little is known, with Oak Creek Canyon and Cameron Canyon being the only confirmed, extant populations within the WMPA.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Electric Power Production: About 900 acres of BLM land have operational windmills and 1,500 more acres are authorized for wind development. An Environmental Impact Statement was initiated for wind energy development but not completed when the industry experienced a slow period. Impacts would be primarily to the vegetation community. Cattle / Horse Grazing: Most of the habitat south of Highway 58 is private land, with a cattle ranching operation. A herd of pronghorn antelope also uses the area. Habitat Restoration: On BLM land one of the major wind energy companies is replacing about 200 turbines with about 50 more efficient models, leaving 150 sites available for rehabilitation. These sites would be rehabilitated with native vegetation and eventually become acceptable habitat. Erosion from the existing wind farms will be repaired.</td></tr>
</table>

Major Information Sources: David L. Laabs, Biosearch Wildlife Surveys, Box 8043, Santa Cruz, California 95061; BLM - Barstow and Ridgecrest Resource Area staff.

TOWNSEND'S BIG-EARED BAT

Regional Summary of Townsend's Big-eared Bat

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Occurs throughout the western United States; in California found from sea level up to 6,000 feet elevation in the Sierras; found throughout the WMPA in the vicinity of mines and caves; distribution is regulated by the availability of cave-like roosting habitats; the majority of roosts are in mines; the largest known roosts in the WMPA are at China Lake NAWS.	Form maternity colonies in the spring (mid-March in the desert) of a dozen to several hundred individuals; mating occurs between October and February in hibernacula; single young are born between May and July, and are fully weaned at six weeks of age; nursery colonies begin to disperse in August; maternity roost temperatures are important (and a limiting factor), being about 30°C.	Seasonal Activity: Does not undertake long migrations, one study showing a seasonal movement of only 20 miles. Feeding: More than 90% of the diet consisting of medium-sized moths;flies and beetles are also taken. Habitat Preferences: Prefers cavity forming rock and old mining districts; the majority of roosts are in caves/mines at least 100 feet long and the ceiling 4 feet high; mines with multiple entrances often used where air is drawn through in a chimney effect; maternity colonies often found in mines within two miles of a canyon with water.
Jurisdictional Occurrence: (1) China Lake NAWS, (2) Twentynine Palms Marine Corps Base, (3) CDFG, (4) BLM; (5) Ca. State Parks, (6) Fort Irwin NTC, (7) JTNP.		
WMPA Locations: (1) Redwing, Star of the West and Argus Sterling (combination hibernation and maternity roost) Mines in the Argus Range (significant maternity roosts), Josephine Mine near Coso Cold Springs (significant maternity roost); (6) Avawatz Mountains; (2) Bullion Mountains; (7) JTNP; (3) Camp Cady WA; (4) Afton Canyon ACEC; Pisgah Crater RNA; Black Mountain ACEC/Wilderness; Newberry Mountains Wilderness; Ord Mountains; Cady Mountains WSA; Little Cactus Flat (significant hibernation roost); McCloud Flat (significant hibernation roost); (5) Red Rock Canyon State Park; Pinto Mountains, north slope of the San Bernardino Mountains, Superior Lake, Argus Range, Slate Range, the Coso Range; (4) Southeast of Little Lake (significant maternity roost); Haiwee Reservoir (significant maternity roost).		
Committed Long-term Management: Camp Cady WA; Red Rock Canyon State Park; Afton Canyon ACEC, BLM Wilderness Areas/ Wilderness Study Areas; JTNP.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Only 50% of juvenile bats survive their first year, survivorship increases to 80% thereafter; restrictive roost requirements and intolerance of roost disturbance primarily responsible for declines; demolition, renewed mining, entrance closure, human-induced fire, renovation, and/or roost disturbance are responsible for 36 of 38 documented cases of lost roosts in California; loss of riparian vegetation has affected foraging habitat. Population trends:Declining; over the past 40 years in California there has been a 52% loss of maternity colonies, 45% decline in available roosts, 54% decline in the total number of animals, and 33% decrease in the average size of remaining colonies.		
Management Policies: State Parks: Mine program: site evaluations and erecting of bat-friendly grates. Mine safety program includes restricting access into mine shafts, tunnels, and adits for bats. No rock climbing or rapelling permitted near bat roosting areas. BLM: IM#CDD-85-134: Closure of Mine Entrances Allowing Bat Use; and IM#93-291: Use of Caves Important to Bats.		

Major Information Sources: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514; CDFG staff; BLM- Barstow and Ridgecrest Resource Area staff; Ca. State Park staff.

WESTERN MASTIFF BAT

Regional Summary of Western Mastiff Bat

Fed: Species of Concern **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Historically colonies occurred north of Los Angeles, the Central Valley, and Kern River Canyon, with individual bats found from San Francisco Bay to the Sierras.	Breeds in the spring, giving birth to a single young in early to mid-summer; colonies generally contain fewer than 100 individuals.	Roosting: A crevice-dwelling species of cliff faces (granite, sandstone, or columnar basalt) of exfoliating granite boulders; also utilizes cracks in buildings; adult males and females may roost together throughout the year, in contrast to other North America bat species. Seasonal Activity: Move relatively short distances seasonally; do not undergo prolonged hibernation and may be detected throughout the winter; detected at all hours of the night; heard in the desert at least 15 miles from the nearest possible roosting site. Foraging: May travel and forage in groups; feeds primarily on moths, also taking beetles, crickets, and small hymenopterous insects (e.g., wasps); apparently forages over open areas, including agricultural fields in Imperial Valley.
Jurisdictional Occurrence: (1) Twentynine Palms Marine Corps Base; (2) Edwards AFB; (3) JTNP; (4) China Lake NAWS; (5)Fort Irwin NTC; (6) BLM; (7) Ca. State Parks.		
WMPA Locations: (1) Twentynine Palms Marine Corps Base; (2)Edwards AFB; (3) JTNP - Barker Dam and Cottonwood Springs; (4)Coso Mountains; (5) Granite Mountains; (6) foraging habitat at the following: Afton Canyon ACEC, Cady Mountains Wilderness, Bright Star Wilderness, Darwin Falls Wilderness Area, Coso Range Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness, Grass Valley Wilderness, Jawbone/Butterbredt ACEC, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness, Sand Canyon ACEC, and Short Canyon ACEC; (7) Red Rock Canyon State Park.		
Committed Long-term Management: JTNP; Red Rock Canyon State Park; Afton Canyon ACEC and Wilderness Areas/ WSAs.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Urban development results in loss of both roosting and foraging habitats; construction activities (quarry operations, highway projects, water impoundments) that impact cliffs or boulders could affect potential roost sites; rock climbing may also disturb roosting bats, particularly at Joshua Tree National Park; pesticide applications may affect the prey base of this species. Population trends: Since no historic or current roost sites have been located in the WMPA, population status is unknown.		
Management Policies: State Parks: Mine program: site evaluations and erecting of bat-friendly grates. Mine safety program includes restricting access into mine shafts, tunnels, and adits for bats. No rock climbing or rapelling permitted near bat roosting areas. BLM: IM#CDD-85-134: Closure of Mine Entrances Allowing Bat Use; and IM#93-291: Use of Caves Important to Bats.		

Major Information Sources: Patricia Brown-Berry, Brown-Berry Biological Consulting, 134 Wilkes Crest, Bishop, California 93514; Ca. State Parks staff; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

YELLOW-EARED POCKET MOUSE

Regional Summary of Yellow-eared Pocket Mouse

Fed: None **State**: None	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, hibernation**
Much of the range of the species is within the WMPA; inhabits foothills of the Sierra Nevada, along the western edge of the Mojave Desert, from Kelso Valley (south) to Sand Canyon (north), between 3,380 and 5,300 feet elevation; similar, suitable habitat occurs north and south of the known range; found in Joshua tree woodland, desert scrub, pinyon-juniper woodland, mixed and montane chaparral, sagebrush, and bunchgrass habitats in sandy soils with sparse to moderate shrub cover.	Likely reproduces between March and September, producing a single litter each year; reproduction may be curtailed in dry years.	Foraging: Likely forages on seeds and fruits of a variety of grasses, annuals, and shrubs; seeds cached during the spring to provide food during the winter months; may occasionally feed on insects. Seasonal Activity: Apparently hibernates during the winter and aestivates during the summer; restricted surface activity and relatively low abundance make it difficult to detect.
Jurisdictional Occurrence: BLM; Kern County; Inyo County.		
WMPA Locations: eastern slope of the Sierra Nevada: Freeman Canyon, Horse Canyon, Indian Wells Canyon, Kelso Valley, Sage Canyon, Sand Canyon ACEC, Jawbone/Butterbredt ACEC (suitable habitat), and Short Canyon ACEC (suitable habitat).Bright Star Wilderness (suitable habitat), Kiavah Wilderness (suitable habitat), Owens Peak Wilderness (suitable habitat), Sacatar Trail Wilderness (suitable habitat).		
Committed Long-term Management: Sand Canyon ACEC, Bright Star Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Given its narrow distribution, any habitat disturbance may have significant, deleterious effects; cattle and sheep grazing pose a potential threat due to effects on plant assemblages, compaction, and erosion; off-highway vehicle activity and mining also pose threats by removing vegetation. Population trends: Most of the canyons in which the species occurs remain relatively undisturbed and populations appear to remain extant.		
Management Policies: BLM: Public Roads: Public roads and routes exist within the jawbone/Butterbredt ACEC and other areas within its habitat. A limited number of corridors are within the newly designated Wilderness Areas. Utility Transmissions: Transmission lines are in its habitat. Electric Power Production: North of Highway 58, a small number of acres of BLM land have operational windmills and potentially a significant number of additional acres are authorized for wind development. Impacts would be primarily to the vegetation component of its habitat. The Middle Knob Area, just north of Highway 58 in the Tehachapi area may support a population of this species, or perhaps the Tehachapi Pocket Mouse. In either case, one these species would be impacted by wind energy development. Cattle/ Horse Grazing: Cattle grazing allotments with potential pocket mouse habitat include the Hanson Common, Rudnick Common, Walker Pass Common, Lacey/Cactus/McCloud and Tunawee Common allotments.		

Major Information Sources: David L. Laabs, Biosearch Wildlife Surveys, Box 8043, Santa Cruz, California 95061; BLM-Barstow and Ridgecrest Resource Area staff.

CHAPTER IV
BIRDS

AMERICAN WHITE PELICAN

Regional Summary of American White Pelican

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Away from the Salton Sea, the species is a transient through southern California; peak period is mid-March through mid-May; largest numbers of non-breeding pelicans at Salton Sea (year round), with thousands in summer, up to 30,000 in late winter; Piute Ponds is most common place in WMPA the species is seen. An undefined migratory corridor is present in the WMPA.	None. Largest California nesting colonies are in Lower Klamath National Wildlife Refuge in Siskiyou County and Clear Lake National Wildlife Refuge in Modoc County; nest on low, bare islands in large lakes; breeding season from early April to late August.	Foraging: Forage during day and night by dipping bill into water to catch fish; do not dive, as does Brown Pelican; forage on edge of lakes, marshes, rivers, estuaries. Roosting: Roost in either shallows or on shore in flocks often exceeding 100; "loafing sites" on banks and sandbars adjacent to foraging areas; found on shallow ponds and marshes in WMPA.
Jurisdictional Occurrence: (1, 8, 9, 10, 11, 14, 16) San Bernardino County; (2) JTNP; (3) Twentynine Palms; (4) Twentynine Palms Marine Corps Base; (5) Palmdale; (6) Lancaster; (7) Edwards AFB; (8, 16, 18) BLM; (12) Los Angeles Department of Water and Power; (12, 15) Inyo County; (13) Apple Valley; (14) Hesperia; (17) Ridgecrest.		
WMPA Locations: (1) Big Morongo Canyon; (2) Keys Ranch, Long Canyon; (3) Twentynine Palms Visitor Center; (4) Twentynine Palms Marine Corps Base sewage ponds; (5) Lake Palmdale, Palmdale; (6) Lancaster, Lancaster sewage ponds; (7) Piute Ponds; (8) Harper Dry Lake; (9) Oro Grande; (10) Mojave Narrows Regional Park (Pelican Lake); (11) Dale Lake; (12) Haiwee Reservoir; (13) Jess Ranch; (14) Summit Valley; (15) Little Lake; (16) Cronese Lakes (when full); (17) Ridgecrest; (18) Koehn Dry Lake.		
Committed Long-term Management:(1) Big Morongo Canyon ACEC; (2) JTNP; (8) Harper Dry Lake ACEC; (16) Cronese Lakes ACEC; (10) Mojave Narrows Regional Park.		
Threat Analysis: Shooting is the greatest source of mortality from band returns. Nesting individuals: Nesting pelicans are vulnerable to habitat degradation and human disturbance of historically critical foraging and nesting habitat; lowered water levels lead to higher predation by Coyote and Red Fox. Foraging, roosting individuals: Pelicans are vulnerable to habitat degradation and human disturbance; 8000 birds (10-20% of western population) died at Salton Sea in 1996 from botulism; at Salton Sea, birds are threatened by agricultural runoff, industrial pollution, sewage, rising selenium levels, botulism, and increasing salinity; pesticides and mercury not considered significant causes of population declines. Population trends: Studies have shown an increase of 5.3% per year from 1966 to 1991, but populations still less than presettlement times; formerly nested on large lakes throughout California; nested at Salton Sea until 1957; now nest at only Klamath and Clear Lake in California.		
Management Policies: The INRMPs at Edwards AFB and Twentynine Palms Marine Corps Base are compatible.		

Major Information Sources: Chet McGaugh, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff.

BALD EAGLE

Regional Summary of Bald Eagle

Fed: Threatened **State**: Endangered	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Wintering habitat consists of lakes, ponds, and reservoirs, where only one or two birds are usually reported; regular wintering population at Big Bear Lake; wintering birds in southern California often return to the same sites; observed no more than several days at sewage ponds, ephemeral lakes and playas, and the Mojave River when water is present.	None. Regularly nests in northern California and Channel Islands; unsuccessful attempts in southern California include Lake Silverwood, Tinnemaha Reservoir, Lake Skinner, San Jacinto Valley.	Foraging: Forages for fish and waterfowl at lakes, ponds, and reservoirs; regularly forages near several stock ponds on private lands within WMPA; may forage on carrion in the Mojave Desert; reservoirs supporting coots and ducks are frequented. Roosting: Roosts at night in several essential locations for birds occurring at Silverwood Lake; requires protected, traditional nighttime roosts (often communal) and daytime perches near shoreline, including trees and rocks that may be located on or near the ground; sites are often in groves and the largest trees, especially those with open branches that facilitate landing; manmade structures usually avoided.
Jurisdictional Occurrence: (1) Hesperia; (2) Apple Valley; (3; 8) San Bernardino County (4) Victorville; (5) China Lake NAWS; (6) Los Angeles Department of Water and Power; (7) Edwards AFB; (8) BLM; (9) Helendale - Mojave River and Silver Lakes; (10) JTNP; (11) CDFG.		
WMPA Locations: (1) Las Flores Ranch; (2) Jess Ranch; (3) Mojave Narrows Regional Park (Horseshoe and Pelican Lake); (4) Mojave River west of I-15; (5) China Lake sewage ponds; (6) Haiwee Reservoir; (7) Piute Ponds; (8) Harper Dry Lake; (9) Helendale - Mojave River and Silver Lakes; (10) JTNP dams in wet years; (11) Camp Cady WA, Hinkley CE.		
Committed Long-term Management:(8) Harper Dry Lake ACEC; Cady Mountains WSA; Afton Canyon ACEC; (10) JTNP dams; (11) Camp Cady WA, Hinkley CE (foraging).		
Threat Analysis: Foraging, roosting individuals: Primary threat in WMPA is human disturbance at wintering sites; particularly susceptible to disturbance (lights, noise, etc.) at night roosts; boating, gunfire, fishing sites near perches, and low-flying aircraft are incompatible human uses for wintering eagles; electrocution from distribution and transmission lines problem for juveniles and birds flying in stormy weather. Population trends: The status of the Bald Eagle in the State is improving; significant declines in California from the historic population size, but have slowly increased in numbers over the past two decades; increasing reports of wintering eagles in the WMPA are probably due to increased coverage; federally reclassified from endangered to threatened in 1994.		

Major Information Sources: Lawrence F. LaPré, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff; CDFG staff.

BANK SWALLOW

Regional Summary of Bank Swallow

<table>
<tr><td>Fed: None
State: Threatened</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Nesting</td><td>Foraging, Roosting</td></tr>
<tr><td>Fairly common spring (peak in April and early May) and fall (peak in mid-August to mid-September) migrant through California deserts on broad fronts, concentrating over marshes, ponds, and agricultural fields; “casual” in southern California in winter; not dependent on riparian vegetation; in WMPA, mostly seen over open water; in the WMPA, areas known to concentrate migrant Bank Swallows include Harper Dry Lake, China Lake, and Piute Ponds.</td><td>None. Most breeding in California is in Shasta, Siskiyou, Modoc, and Lassen Counties where they nest in colonies; 70 to 80% of the California breeding population nests on the banks of the Sacramento River between Shasta and Contra Costa Counties; nesting is typically associated with eroded banks near flowing water; nest from late March to early July; extirpated as a breeding bird in southern California; no nesting records in the WMPA; only one recent nesting occurrence in southern California (Ventura County).</td><td>Foraging: Bank Swallows are diurnal, aerial insectivores; proximity to water is important at all seasons, where wetlands provide a steady source of insects and a buffer against extreme temperatures.
Roosting: There are no known roost sites in the WMPA.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: (1) Edwards AFB; (2) BLM; (3) San Bernardino County; (4) China Lake NAWS; (5) Lancaster.</td></tr>
<tr><td colspan="3">WMPA Locations: (1) Piute Ponds; (2) Harper Dry Lake; (3) Mojave Narrows Regional Park; (4) China Lake NAWS; (5) “Lancaster area.”</td></tr>
<tr><td colspan="3">Committed Long-term Management:(2) Harper Dry Lake ACEC; Afton Canyon ACEC; Big Morongo Canyon ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Nesting individuals: Nesters adversely affected by flood control and bank protection projects; eliminated from southern California because “...virtually every river and natural waterway was converted to flood control channels.” Population trends: Species is declining throughout its breeding range in California; since 1990, the breeding range in California has decreased by 50%, and, as of 1992, the population is declining throughout the State; total breeding population of 16,000 pairs along the Sacramento River in 1986 was estimated to be about 4,500 pairs by 1990; what seems like a relatively recent increase of migrant individuals in desert regions may be due to other factors. No threats in WMPA.</td></tr>
</table>

Major Information Sources: Chet McGaugh, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff.

BENDIRE'S THRASHER

Regional Summary of Bendire's Thrasher

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Breeds within a discontinuous band of suitable habitat from Joshua Tree National Park to near Victorville; arrives in California by February and early March; singing birds appear on breeding grounds in late March and early April and most have left California by the end of July, moving to wintering grounds to the southeast; restricted to widely scattered locations supporting either Joshua trees, other species of *Yucca*s, or cholla cactus.	Territorial from mid-March to mid-June; only five nests with eggs reported in California. Mostly found where there are denser columnar cholla cactus, Joshua Trees, Mojave yucca and Spanish bayonet; no difference in densities of Joshua trees between places with and without the bird; may be found at sites lacking one or more of these species, but not all three; likely interrelationship between breeding birds and species of *Yucca* and *Opuntia*; prefers firmly packed sand, likely due to foraging behavior of probing, pecking, and hammering but not digging; the Antelope Valley may be unsuitable for breeding populations.	Foraging: Feeds primarily on insects [grasshoppers, beetles, caterpillars, ants, other larvae (lepidoptera), pupae] and other arthropods (termites), but also berries and seeds; feeds primarily on the ground.
Jurisdictional Occurrence:(1) Lancaster; (2, 4, 8, 10-19) BLM; (2, 4, 5, 6) San Bernardino County; (3) Victorville; (5) Apple Valley; (6) Yucca Valley; (6) U.C. Reserve System; (7) JTNP; (8) Kern County; (9) California City; (20) CDFG.		
WMPA Locations: (1) Five miles east of Lancaster; (2) Mud Hills area; (3) Victorville; (4) Sidewinder Mountain; (5) southeastern Apple Valley; (6) northern Yucca Valley; (7) JTNP (Smoke tree wash nesting); (8) Kelso Valley; (9) California City; (10-19) Afton Canyon ACEC, Big Morongo Canyon Preserve, Black Mountain ACEC, Cronese Lakes ACEC, Juniper Flats ACEC, Desert Tortoise Natural Area, Mojave Fish Hook Cactus ACEC, Rainbow Basin Natural Area, Rodman Mountains,Upper Johnson Valley Yucca Rings ACEC; (20) Camp Cady WA, Hinkley CE.		
Committed Long-term Management: JTNP; Afton Canyon ACEC; Big Morongo Canyon Preserve; Cronese Lakes ACEC; Desert Tortoise Natural Area; Juniper Flats ACEC; Rainbow Basin Natural Area; Camp Cady WA, Hinkley CE; UC Burns Reserve; Wildlands Conservancy.		
Threat Analysis: Nesting and foraging individuals: Small and locally distributed populations threatened by off-road vehicle use, overgrazing, and harvesting of Joshua trees and other species of *Yucca*s; loss of breeding habitat to urban and agricultural development that could eliminate one of the small, localized populations. Population trends: Continue to occupy all parts of historical breeding range in eastern Mojave and JTNP, and the ranges in both areas are larger than previously reported; existing information was inadequate to determine whether Bendire's Thrasher populations were increasing, decreasing, or stable.		
Management Policies: JTNP: Surveys in 1986 found JTNP has housing in the thrasher's habitat and that several of the habitat areas have roads. BLM: Grazing: Johnson Valley Sheep Allotment and Rattlesnake Cattle Allotment are within potential habitat areas. Private land around the DTNA heavily grazed by domestic sheep. Restrictions placed on sheep grazers by BLM on grazing public land in the area led many to lease private land, with few restrictions, resulting in very heavy impacts to shrubs and other vegetation.		

Major Information Sources: A. Sidney England, 830 Donovan Ct., Davis, California 95616; BLM - Barstow and Ridgecrest Resource Area staff; Joshua Tree National Park staff; CDFG staff.

BROWN-CRESTED FLYCATCHER

Regional Summary of Brown-crested Flycatcher

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Nests along the Colorado River and a few scattered localities throughout the deserts; arrives on nesting grounds during the first or second week of May and leaves by mid-August (infrequently as late as early September); unrecorded in winter in California; species has nested at Tecopa (15 miles northeast of the WMPA) and Weldon (9.5 miles west of the WMPA).	Nests in cavities of Fremont cottonwood and various willow species; also known to nest in utility poles and fence posts; does not create own cavities, usually using those created by various woodpeckers; known occurrences at Cushenbury Springs, Mojave River in Victorville, and Morongo Valley; parasitism by Brown-headed Cowbirds not known; the presence of woodpeckers or other species that excavate cavities is important.	Foraging: Primarily eats insects by "hawking" and "gleaning;" infrequently observed eating hummingbirds; forages in same areas where it nests, including riparian woodland or forest, dominated by cottonwoods and willows, usually in a climax stage; rarely observed away from known breeding areas.
Jurisdictional Occurrence:(1) BLM; (1, 2,4) San Bernardino County; (3, 5) Victorville; (3) Apple Valley.		
WMPA Locations:(1) Big Morongo Canyon (known to nest), Great Falls Basin ACEC**,** Jawbone/Butterbredt ACEC, Sand Canyon ACEC, Short Canyon ACEC, Argus Range Wilderness, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail.; (2) Cushenbury Springs; (3) Kemper Campbell Ranch (Mojave Narrows); (4) Mojave Narrows Regional Park; (5) Mojave River west of I-15.		
Committed Long-term Management:(1) Big Morongo Canyon, Great Falls Basin ACEC**,** Jawbone/Butterbredt ACEC, Sand Canyon ACEC, and Short Canyon ACEC. Argus Range Wilderness, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness.		
Threat Analysis: Nesting and foraging individuals: Habitat destruction (clearing of forest and woodland communities for fuel, agriculture, development, or flood control) primary threat to the species in the WMPA; competition with European Starlings for relatively small numbers of available cavities (compared to the Colorado River) may be a problem; other problems include lowering of water table with concomitant adverse effects to cottonwood-willow forest, fires that have eliminated mature trees and their cavities, invasion of exotic plant species; few data exist to indicate the effects of off-highway vehicles on nesting Brown-crested Flycatchers. Population trends: Species' range has expanded in California over the last 35+ years; to the west and north as far as the South Fork of the Kern River; breeding localities in the California desert away from the Lower Colorado River Valley appear to be stable; by 1976, 800 Brown-crested Flycatchers were estimated to occur in the Lower Colorado River Valley, but habitat destruction or alteration has decreased that number significantly.		
Management Policies: BLM: Public Roads: Public roads and routes exist within the Jawbone/Butterbredt ACEC and other areas within potential flycatcher nesting and foraging areas. Utility Transmission: Transmission lines are in foraging habitat, not near nesting habitat. Electric Power Production: About 900 acres have operational windmills and 1,500 more acres are authorized for wind development. Impacts would be primarily to migrating flycatchers. Cattle/ Horse Grazing: Cattle grazing allotments with potential brown-crested flycatcher foraging habitat include the Hanson Common, Rudnick Common, Walker Pass Common, Lacey/Cactus/McCloud allotment, and Tunawee Common. Wild Horses and Burros: Small herd of horses permitted in the Lacey/Cactus/McCloud allotment in the northern part of the planning unit.		

Major Information Sources: Stephen J. Myers, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff.

BURROWING OWL

Regional Summary of Burrowing Owl

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Reaches peak abundance in agricultural areas in Imperial Valley; open desert scrub is widely but sparsely inhabited.	Those breeding in California are mostly non-migratory; nesting is generally from March through June with fledglings reaching independence in August and September; generally use burrows of other animals, particularly ground squirrels.	Activity: Active both day and night but mostly at dawn and dusk. Foraging: Dietary specialist, feeding mostly on arthropods; two researchers noted a prevalence of earwigs in the bird's diet; mammalian prey may increase in the winter.
Jurisdictional Occurrence: BLM; Ca. State Parks; CDFG; JTNP; All Jurisdictions.		
WMPA Locations: Widespread, many locations.		
Committed Long-term Management: DTNA; Rainbow Basin ACEC; Antelope Valley Poppy Reserve, Red Rock Canyon State Park, Ripley Desert Woodland, Saddleback Butte State Park; Camp Cady WA, Hinkley CE, King Clone ER, West Mojave Desert ER; JTNP; Harper Dry Lake ACEC.		
Threat Analysis: Nesting and foraging individuals: Low intensity agriculture may increase suitable habitat and prey; urban development and pest eradication decrease prey and burrow availability, degrade habitat quality, and may increase mortality risk; known threats include direct mortality from man (including vehicle collision), pesticides, habitat degradation, destruction, and loss, and predators; subtle adverse affects to suitable habitat result from grazing, invasion of non-native plants, alteration of flood patterns through flood control, erosion; dogs and cats are known predators. Population trends: No data exist on the population size, structure, or trends within the Mojave Desert; California Department of Fish and Game estimated between 1,000 and 10,000 pairs in California, that there was a declining trend, and in general, the species is considered uncommon, local or patchy in distribution, currently in slow decline but not yet threatened with extirpation; a few hundred pairs are expected in the WMPA.		
Management Policies: BLM: Cattle Grazing occurs within this species' habitat in Johnson Valley Allotment and Rattlesnake Allotment. Sheep grazing occurs within this species' habitat. The INRMP at Edwards AFB and current management at China Lake NAWS are compatible.		

Major Information Sources: Kurt F. Campbell, Campbell BioConsulting, 40950 Via Media, Temecula, California 92591; CDFG staff; Ca. State Parks staff; BLM - Barstow and Ridgecrest Resource Area staff.

CALIFORNIA GULL

Regional Summary of California Gull

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Rare spring and winter transient; northbound migrants present Feb - April; fall transients present in mid- to late July; may be locally abundant in winter (Mojave Narrows, Antelope Valley); likely occurs at most permanent bodies of water during migration.	None. Nearest breeding colonies are at Salton Sea to south and Mono Lake to north; coastal nesting at San Francisco Bay; nests on isolated islands in rivers, reservoirs, and lakes; uses habitats associated with both fresh and saline water.	Foraging: Forages at landfills, sewage ponds, reservoirs, lakes, marshes, orchards, parking lots, playgrounds, and other urban areas; opportunistic feeders on small mammals, chicks and eggs, fish, invertebrates; scavenges garbage, pirates food.
Jurisdictional Occurrence: (1) China Lake NAWS; (2) Kern County; (2) BLM; (3, 7, 8, 9, 10, 13) San Bernardino County; (4) Edwards AFB; (5) Lancaster; (6, 12) Palmdale; (13) Victorville; (11) Los Angeles County; (13) Apple Valley; (13) Hesperia.		
WMPA Locations: (1) China Lake sewage ponds; (2) Koehn Dry Lake, Big Morongo Canyon Preserve, Cronese Lakes ACEC, Harper Dry Lake ACEC; (3) Harper Dry Lake; (4) Piute Ponds; (5) Lancaster sewage ponds; (6) Lake Palmdale; (7) Hesperia Landfill; (8) Mojave Narrows Regional Park (Horseshoe Lake); (9) Helendale (Silver Lakes); (10) Spring Valley Lake; (11) Apollo Lake; (12) Palmdale sewage ponds; (13) Mojave River Valley.		
Committed Long-term Management: (3) Harper Dry Lake ACEC; Big Morongo Canyon Preserve; Cronese Lakes ACEC; (8) Mojave Narrows Regional Park.		
Threat Analysis: Nesting individuals: Nesters are susceptible to human and animal disturbance; degradation of nesting sites by land bridge connections, inundation, excessive vegetation growth. Foraging individuals: California Gulls are not often shot or trapped; not threatened by pesticide contamination; may ingest or become entangled in plastic, wire. while foraging at landfills. Population trends: Populations may be greater than in last century; as many as 500 in Lancaster, whereas only several dozen were seen in 1980's; several hundred noted in the Mojave River Valley mid-winter bird counts; increases related to expanding residential development and subsequent enhanced food availability.		
Management Policies: The INRMP at Edwards AFB and current management at China Lake NAWS are compatible.		

Major Information Sources: Kathy C. Molina and Kimball L. Garrett, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

COOPER'S HAWK

Regional Summary of Cooper's Hawk

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Relatively common migrant and winter visitor, Cooper's Hawk is an uncommon permanent resident in southern California, with a greatly reduced breeding population restricted to open montane forests, river bottomlands, and desert oases.	Widely scattered nests throughout southern California and the WMPA; nesting confirmed at Mojave Narrows, Nudist Spring in the Jawbone/Butterbredt ACEC and Morongo Valley; probable that there are unrecorded nests in urban/residential areas; returns to the same area year after year, often building new nests in the vicinity of the older one; eggs laid early April to late May; in the WMPA, riparian areas are most important for breeding Cooper's Hawks. The Southern Sierras contain oak-woodland, pinyon-juniper, coniferous forest, and riparian vegetation communities with good potential for nests.	Foraging: Prey includes jays, flickers, doves, smaller raptors, poultry, gallinaceous game birds, shorebirds, smaller ducks, squirrels, ground squirrels, cottontails, young hares, larger rats, insects, and herptofauna.
Jurisdictional Occurrence: Apple Valley (nesting), San Bernardino County, Victorville, BLM. In winter, Cooper's Hawks are ubiquitous wherever suitable prey occur; found in all jurisdictions.		
WMPA Locations: Apple Valley, Mojave Narrows Regional Park, Morongo Valley, Victorville, southern Sierras, Afton Canyon ACEC, Big Morongo Canyon Preserve, Cushenbury Springs, Harper Dry Lake ACEC, near Helendale, Jawbone/Butterbredt ACEC, Sand Canyon ACEC, Short Canyon ACEC, Kane Wash (a critical nesting and foraging area for many raptors), Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Owens Peak Wilderness, and Sacatar Trail Wilderness. Throughout WMPA in winter.		
Committed Long-term Management: Jawbone/Butterbredt ACEC; Big Morongo Canyon ACEC, Afton Canyon ACEC,Harper Dry Lake ACEC,Sand Canyon ACEC, Short Canyon ACEC, Sand Canyon ACEC, Short Canyon ACEC; Red Rock Canyon State Park.		
Threats Analysis: Nesting and foraging individuals: Habitat destruction (logging in forested areas and southern California development), pesticide contamination, and shooting are the primary threats range-wide; logging is a greater threat to breeding populations than wintering populations, and is not an issue in the WMPA; destruction of riparian habitats from depletion of the water source, damage by livestock, and invasion by exotic weeds are all threats in the WMPA; foraging at backyard bird feeders increases the risk of collisions with windows, predation by domestic pets, accidental or deliberate poisoning, and other human persecution. Population trends: Authors suggest a significant decline in breeding pairs in southern California due to the destruction of riparian areas, which is their principal nest habitat; there is no evidence of a decline in migratory populations of Cooper's Hawk in the western United States.		
Management Policies: See below.		

Major Information Sources: Paul Grindrod, HawkWatch International, P.O. Box 660, Salt Lake City, Utah 84110; BLM - Barstow and Ridgecrest Resource Area staff; Joshua Tree National Park staff; California State Park staff; CDFG staff.

Bureau of Land Management

Management of Land Uses in Relation to Long-term Conservation of Cooper's Hawk

1. Public Roads - -Public roads and routes exist within the Jawbone/Butterbredt ACEC and other areas within potential Cooper's hawk nesting and foraging habitat. A limited number of corridors are within the newly designated Wilderness Areas.

2. Vehicle-based Camping - -Installation of improved camping areas away from riparian vegetation and no camping is allowed in riparian areas at Afton Canyon, Harper Dry Lake, and Big Morongo Canyon Preserve. Rerouting of routes outside of riparian areas in some areas has occurred.

3. Electric Power Production- -About 900 acres of BLM land have operational windmills and 1,500 more acres are authorized for wind development. Impacts would be primarily to migrating birds.

4. Mineral Exploration and Development- -There are 5 -10 small mining operations in potential habitat.

5. Cattle/ Horse Grazing - -The Cady Mtn. Allotment occurs within this species habitat. A riparian exclusion fence has been constructed at Afton Canyon ACEC. A number of grazing allotments are in the southern Sierras and a number of riparian excloures have been established. Grazing systems, involving avoidance of the riparian areas during certain times of the year are in place for some.

Proactive Programs of Benefit to the Long-term Conservation of Cooper's Hawk

1. Habitat Restoration- - Continued riparian restoration/saltcedar control is planned and should benefit this species.

2. Law Enforcement - -BLM law Enforcement Rangers and two Park Rangers patrol the Jawbone/Butterbredt ACEC area on a regular basis.

DOUBLE-CRESTED CORMORANT

Regional Summary of Double-crested Cormorant

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Rare transients in the WMPA; generally observed during March through May and September through January.	None. Up to several thousand pairs nested at the southern end of the Salton Sea during the winter-spring of 1996-1997; nearest nesting occurs at Channel Islands, Coronados Islands, and Salton Sea; nests in dense colonies, where interior colonies are associated with heron and egret rookeries; artificial structures are commonly used for nesting and roosting throughout their range.	Foraging: Pursues subsurface schooling fish; requires open water; African Clawed Frogs may be the main prey at Piute Ponds. Roosting: In wet years, may be expected at Harper Dry Lake and Cronese Lakes, although not currently reported from either location; undoubtedly occurs in small numbers at ponds and lakes throughout the WMPA; in the interior, requires isolated sand bars, earthen levees, flooded tree snags, and mature live trees for roosting and nesting; roosts in live cottonwoods and planted elms at Mojave Narrows, on manmade structures at Piute Ponds.
Jurisdictional Occurrence:(1) Edwards AFB; (2) Palmdale; (3) Lancaster; (4, 5, 12) San Bernardino County; (6, 10) Los Angeles County; (7) Kern County; (8) China Lake NAWS; (9) Apple Valley; (11) Victorville; (13) BLM.		
WMPA Locations: (1) Piute Ponds; (2) Lake Palmdale; (3) Lancaster sewage ponds; (4) Mojave Narrows Regional Park (Horseshoe Lake); (5) Spring Valley Lake; (6) Apollo Lake; (7) private ponds near Cantil; (8)China Lake Naval Air Weapons Station; (9) Jess Ranch; (10) Lake Los Angeles (until it was drained in the late 1980's); (11) Mojave River; (12) Helendale (Silver Lakes), (13)Big Morongo Canyon Preserve; Harper Dry Lake ACEC and Koehn Dry Lake .		
Committed Long-term Management: Big Morongo Canyon Preserve; Harper Dry Lake ACEC, Mojave Narrows Regional Park.		
Threat Analysis: Nesting individuals: Breeding populations are not likely to develop within the WMPA, thus nullifying any threats to reproduction. Foraging individuals: Sport hunting may be a potential threat at Piute Ponds and at other waterfowl areas in the WMPA; potential conflicts with sport fisherman; have been "controlled" by government agencies where they are considered to be over abundant. Population trends: Populations increasing throughout North America during the last 20 years, with 364,000 pairs currently nesting; reduced human disturbance and reduction in exposure to pollutants believed responsible for the increase; numbers have appeared to increase within the WMPA since the 1970's.		
Management Policies: The INRMP at Edwards AFB and current management at China Lake NAWS are compatible.		

Major Information Sources: Kathy C. Molina and Kimball L. Garrett, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

FERRUGINOUS HAWK

Regional Summary of Ferruginous Hawk

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Strongly associated with plains and desert, absent from montane forests; occurs primarily as a winter visitor or migrant in the WMPA; common in grasslands and agricultural regions in southern California from mid-September to early April.	There are no breeding records in the WMPA; arrive in nest territories from late February to early March, with egg-laying mostly occurring between mid-April and mid-May; in the absence of trees, readily nests on the ground; manmade nest substrates have included haystacks, powerline towers, abandoned buildings, gas and oil development condensation tanks, and artificial nest structures.	Foraging: Largely perch hunters, although they will forage on the ground, fly low over the ground to flush prey, and hover; prey includes Three-lined Ground Squirrel, White-tailed Jackrabbit, Northern Pocket Gopher, Prairie Dog, kangaroo rats, and cottontails; one study indicated that diet is comprised of the following: 70 to 85% mammals, 5 to 13% birds, and the remaining includes amphibians, reptiles, and insects; prey availability is probably the most important factor influencing winter habitat selection.
Jurisdictional Occurrence: BLM; China Lake NAWS; CDFG; Ca. State Parks; JTNP; all jurisdictions.		
WMPA Locations: Antelope Valley; Harper Dry Lake; Helendale; Victorville; China Lake NAWS; Lancaster; Mojave River Valley; Apple Valley, Big Morongo Canyon Preserve, Coso Range Wilderness, Darwin Falls Wilderness, Harper Dry Lake ACEC, Johnson Valley, Kane Wash, north slope of the San Bernardino Mountains, Ord Mountain area, Rose Valley, Sacatar Trail Wilderness, and Superior Lake.		
Committed Long-term Management: JTNP; Camp Cady WA, Hinkley CE, King Clone ER, West Mojave Desert ER; Antelope Valley Ca. Poppy Reserve, Red Rock Canyon State Park, Ripley Desert Woodland State Park, Saddleback Butte State Park; Big Morongo Canyon Preserve, Harper Dry Lake ACEC, Coso Range Wilderness, Darwin Falls Wilderness, Sacatar Trail Wilderness.		
Threats Analysis: Nesting and foraging individuals: Habitat loss poses the greatest threat to birds in southern California and the WMPA; development, recreation, and water reallocation all affect the prey base, in turn affecting the birds; loss of water at Harper Dry Lake and conversion of agricultural fields to urban areas in the Antelope Valley result in loss of important wintering habitat; shooting persists as a problem; pesticide contamination is unstudied but could affect this species. Population trends: Although considered a more or less common species in some places, it was formerly more abundant in California; population status is uncertain, showing increases in some places (Alberta, Idaho, and Wyoming) and decreases in others (Utah); increases may be attributed to better censussing techniques.		
Management Policies: BLM: Public Roads: The site in Rose Valley where the birds winter is within ½ mile of Highway 395. Utility Transmission: Transmission lines in foraging habitat. Electric Power Production: About 900 acres of BLM land have operational windmills and 1,500 more acres are authorized for wind development. Impacts would be primarily to migrating hawks. Cattle/ Horse Grazing: Cattle grazing allotments within Ferruginous Hawk foraging habitat include the Lacey/Cactus/McCloud and Tunawee Common. Sheep Grazing: Sheep may be trailed through the area in April or May, but do not remain in the area.		

Major Information Sources: Paul Grindrod, HawkWatch International, P.O. Box 660, Salt Lake City, Utah 84110; BLM - Barstow and Ridgecrest Resource Area staff; Joshua Tree National Park staff; CDFG staff; Ca. State Parks staff.

GOLDEN EAGLE

Regional Summary of Golden Eagle

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Found throughout WMPA with nest sites restricted to mountainous areas; high-density nesting areas include Red Mountain/El Paso Mountains and Newberry Mountains/Granite Mountains; region with the highest number of historic territories (28) is located in a linear band from Red Rock Canyon State Park, through the El Paso Mountains, to the Argus Mountains; second highest is from Victorville and Apple Valley to the west edge of Fort Irwin.	Breeds in southern California and may remain within its home range throughout the winter; nests may be in cliffs or trees, and may be used year after year by the same pair of birds; courtship takes place in early January with eggs laid from mid-February to mid-March; incubates eggs from 42 to 45 days, with fledgling taking place in about 10 weeks; no nesting birds were reported for Edwards AFB, Twentynine Palms Marine Corps Base, or Fort Irwin NTC.	Foraging: Feeds mostly on mammals, including jackrabbit, cottontail, and larger ground squirrels; feeds on carrion, especially in agricultural areas; in winter, hunts near agricultural fields and sparse desert vegetation; in one study of 27 pairs, home ranges averaged 37.2 mi^2.
Jurisdictional Occurrence: Species found throughout the WMPA in all jurisdictions.		
WMPA Locations: Nests in all mountain ranges in WMPA and forages throughout WMPA.		
Committed Long-term Management: Afton Canyon ACEC, Big Morongo Canyon Preserve, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness, Grass Valley Wilderness, Great Falls Basin ACEC, Harper Dry Lake ACEC, Jawbone/Butterbredt ACEC, Kiavah Wilderness, Argus Mountains Wilderness, Owens Peak Wilderness, Rainbow Basin ACEC, Sacatar Trail Wilderness;JTNP; Antelope Valley Ca. Poppy Reserve, Red Rock Canyon State Park, Ripley Desert Woodland, Saddleback Butte State Park; Camp Cady WA, Hinkley CE, Indian Joe Spring ER, King Clone ER, West Mojave Desert ER.		
Threat Analysis: Nesting individuals: Golden Eagle numbers are limited within the WMPA by the availability of nest sites; urban encroachment at the base of cliffs and buttes where eagles nest may be a problem. Foraging individuals: Shooting remains a primary cause of mortality of both immature and adult Golden Eagles; electrocution from small electrical distribution and transmission lines is a significant problem; high voltage, metal transmission lines are rarely a problem; may suffer from lead poisoning if carrion includes animals containing lead bullets. Population trends: Numbers are declining in the WMPA, with a considerable reduction in nesting locations from historic numbers; based on one calculation, the number of eagle territories present in 1977 is only 28% of the historic record; allowing for overlap of alternate nest sites by using a total of 50 historic territories, the 1977 total represents 38% of the historic total; the California population has been estimated at about 5,000 birds, with about 500 breeding pairs estimated by one researcher; of the 23 nesting territories recorded in the Desert Plan, probably less than half are currently occupied.		
Management Policies: The current management at China Lake NAWS is compatible.		

Major Information Sources: Lawrence F. LaPré, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; Ca. State Parks staff; Joshua Tree National Park staff; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

GRAY VIREO

Regional Summary of Gray Vireo

<table>
<tr><td>Fed: None
State: Species of Special Concern</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Nesting</td><td>Foraging, Roosting</td></tr>
<tr><td>Occurs as a breeder just south (San Gabriel and San Bernardino Mountains) and east (Clark, Kingston, and New York Mountains), with a few records of spring and fall transients, and no known wintering records; winters in the southern portion of Baja California and on the Mexican mainland in Sonora.</td><td>From 1981 to 1992, at Bob's Gap, breeding birds arrived between 7 and 19 of April; arrives as late as May in the eastern San Bernardino Mountains; places nests in stiff-branched or thorny shrubs or small trees; incubation and nesting are both 13 to 14 days; double brooding is frequent.</td><td>Foraging: Insectivorous and frugivorous; during the spring gleans twigs and leaves for insects, especially butterfly and moth larvae and beetles; in the winter it subsists on fruits of the elephant tree, with insects supplementing the diet; all known habitats are on arid slopes dominated by short, densely branched, stiff-twigged shrubs; chamise chaparral without conifers may be used.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: (1) JTNP; (2, 3) Los Angeles County; (4, 7) San Bernardino County; (5) Kern County; (5, 6, 7, 8) BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: (1)JTNP (Black Rock Spring, Smithwater Canyon, Quail Spring); (2) Holcomb Ridge; (3) Largo Vista; (4) south Pinyon Hills; (5) Canebrake Creek (one of a pair); (6) Castle Butte; (7) Harper Dry Lake (migrant); (8) Golden Valley Wilderness, Grass Valley Wilderness, Jawbone/Butterbredt ACEC, Juniper Flats ACEC, Kiavah Wilderness, north slope of the San Bernardino Mountains, Rattlesnake Canyon, Sacatar Trail Wilderness, and Short Canyon ACEC.</td></tr>
<tr><td colspan="3">Committed Long-term Management:(1)JTNP; (7) Harper Dry Lake ACEC; (8) Golden Valley Wilderness, Grass Valley Wilderness, Jawbone/Butterbredt ACEC, Juniper Flats ACEC, Kiavah Wilderness, Sacatar Trail Wilderness, and Short Canyon ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Nesting and foraging individuals: Cowbird parasitism may be one reason for the species' decline; habitat degradation from grazing, unnatural fire regimes, and human recreation (off-highway vehicle use and shooting) are cited as potential threats to nesting vireos. Population trends: Although few data are available, numerous sites are documented in the literature that are no longer occupied, and it seems likely that the loss of many small populations has occurred; currently, only one bird has been observed in the San Gabriel Mountains, the San Bernardino Mountains population(s) is apparently persisting, and the current status in Joshua Tree National Park is not known.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle/ Horse Grazing: Cattle Allotments in species' habitat on north slope of San Bernardino Mountains, including Juniper Flats and Rattlesnake Canyon Allotment.</td></tr>
</table>

Major Information Sources: Kimball L. Garrett and Kathy C. Molina, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

HEPATIC TANAGER

Regional Summary of Hepatic Tanager

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
A scarce and local breeder in California, which is at the northwestern extreme of the species' range; in California, birds occur in arid conifer woodlands with few or no oaks; arrives in late April or early May and departs by the end of August; pairs noted outside WMPA, at Clark Mountains, New York Mountains, and Kingston Range.	Not known to breed in WMPA, but several records occur nearby (see left and below).	Foraging: Insectivorous and frugivorous; gleans foliage of broadleafed trees and pines, usually high in tree crowns, sometimes capturing flying insects in the air; feeds on insects, nectar, fruits, and berries. Roosting: The few migrants noted in the WMPA have been in riparian (cottonwood-dominated) woodlands of large oases.
Jurisdictional Occurrence: (1, 2) BLM; (1, 2) San Bernardino County; (3) Angeles National Forest.		
WMPA Locations: (1) Big Morongo Canyon (migration); (2) Afton Canyon (migration); (3) Lower Shake Canyon (just (1/8 mile) south of WMPA); Arrastre Creek on the north slope of the San Bernardino Mountains, and riparian sites in the Juniper Flats region.		
Committed Long-term Management:(1) Big Morongo Canyon ACEC; (2) Afton Canyon ACEC; Juniper Flats ACEC.		
Threat Analysis: Nesting and foraging individuals: Habitat destruction, especially through human recreation and forest fires, is considered the greatest potential threat to California breeding populations. Population trends: The expansion of this species' breeding range into California is paralleled by similar expansions into southern Nevada, southern Utah, southern Colorado, and northern New Mexico; Breeding Bird Survey records are too few to determine population trends in North America.		
Management Policies: BLM:**:**Cattle/ Horse Grazing: Rattlesnake Allotment occurs within this species' habitat. Land Acquisition: An extensive riparian area in the Juniper Flats region has been recommended for acquisition. Habitat Restoration: Continued riparian restoration/saltcedar control is planned and should benefit this species, as well as fencing to exclude livestock and OHV in portions of the Juniper Flats region ex: Cottonwood Spring Exclosure and planned Stone Spring and Rock Corral exclosures.Cowbird parasitism is thought to be a factor in this species decline, but no efforts have been initiated on public land.		

Major Information Sources: Kathy C. Molina and Kimball L. Garrett, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

INYO CALIFORNIA TOWHEE

Regional Summary of Inyo California Towhee

Fed: Threatened **State**: Endangered	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Restricted to Argus Mountains.	Requires riparian vegetation at springs.	Feeds on hillsides near springs.
Jurisdictional Occurrence: China Lake NAWS; BLM; CDFG; Inyo County.		
WMPA Locations: Indian Joe Spring Canyon; Great Falls Basin ACEC; Argus Mountains.		
Committed Long-term Management: Indian Joe Spring ER (CDFG); Great Falls Basin ACEC (BLM); Argus Mountains Wilderness.		
Threat Analysis: Water diversions, grazing by burros are the two biggest threats.		
Management Policies: See below. The current management at China Lake NAWS is compatible.		

Major Information Sources: Lawrence F. LaPré, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

California Department of Fish And Game

Habitat of Inyo California Towhee

The following area managed by CDFG provides habitat for the Inyo California Towhee: Indian Joe Spring Ecological Reserve. The reserve was established to protect habitat for a small population of the Inyo California Towhee. In 1992 only one pair and two juveniles were found. The most recent survey, conducted in 1995, documented successful breeding that year, with both adults and juveniles observed. Approximately 8-10 towhees were observed in the lower reaches of the canyon. The upper springs were not surveyed.

Policies Related to Inyo California Towhee

Indian Joe Spring Ecological Reserve - - This reserve was acquired by the CDFG to protect the last remaining private parcel supporting the Inyo California Towhee. Long-term management for this species includes protection of the riparian habitat, protection of the water supply, and control of deleterious non-native species, (Brown-headed Cowbirds and feral burros), where necessary. These management activities will benefit all native species found within the area. Recent management activities have included erecting a fence around the spring to protect it from impacts associated with burros. A management plan for the area has not yet been written.

Bureau of Land Management

Habitat of Inyo California Towhee

The following area managed by BLM provides habitat for the Inyo California Towhee: Great Falls Basin ACEC and Argus Mountains Wilderness. The BLM has approximately 20 acres of riparian habitat at several isolated springs with dense willow riparian vegetation within that ACEC. One-third of its known range is on BLM and state-administered lands. Laabs et al (1992) found 109 individuals on BLM and state land.

The following springs on BLM lands are part of the critical habitat designation for the towhee: Alpha Spring, Austin Spring, Bainter Spring, Benko Spring, Bobcat Spring, Great Falls Basin Springs, Mumford Springs, North Homewood Canyon Springs, North Ruth Spring, Ruby Spring, and Twin Springs. In total, BLM owns about 12 acres out of 15 acres of critical habitat for the Inyo California Towhee. Each of these springs has different levels of human use and was surveyed by Laabs et al.1992:

1) Upper Homewood Canyon: 1/8 mile on either side of stream bed of Upper Homewood Canyon from Ruby Springs (NAWS) and downstream until section 25 and 26. Includes Alpha, Bobcat springs as well. All springs showed signs of towhees. Impact from burros was low although two burros sighted at Alpha Spring. Siphoning of water for use in nearby houses in North Homewood Canyon has caused degradation of habitat.
2) Benko Canyon: A circle of 1/8 mile radius around Benko Spring
   May be suboptimal habitat as towhees are rarely seen. Moderate impacts from burros and up to ten have been spotted using the area. Feral burro paths have been carved into the corridor.
3) North Ruth Spring: A 1 mi^2 patch around a side drainage.
   No breeding towhees present in 1992. Automobiles can access this spring easily and evidence of human use is present. Trampled vegetation and eroded slopes attest to the high level of human use.
4) Mumford Spring: A circle of 1/8 mile radius around the springs.
   Near a well-used camping area at the base of Great Falls. Considerable foot traffic evident in the area. No willows present, but still some birds in the area.
5) Bainter Canyon: A circle of 1/8 mile radius around Bainter Spring
   No breeding towhees in area. Water being siphoned for a house and construction of the water intake box has disturbed the shrub understory.
6) Great Falls Basin: 1/8 mile on either side of a stream bed for approximately 3 miles.
   Human impacts are few and limited to footprints and rock cairns. Burro impacts low to moderate. Some burro grazing in areas. A minimum of 25 adult and 8 juveniles found here in 1992.
7) Austin Spring: A circle of 1/8 mile radius around spring.
   Near a well-used camping area. Evidence of heavy human foot traffic. No willows present, but a pair of towhees did use the area.

Other springs outside of these critical habitat areas were surveyed. In total, 27 adults (35% of the total) and 16 fledgling towhees, were found in these non-critical areas. Of these, 8 adults and 4

fledglings were found on CDFG land and 19 adults and 12 fledglings were within the ACEC (Laabs 1992).

Management of Land Uses in Relation to Long-term Conservation of Inyo California Towhee

1. Public Roads - -Most areas of towhee habitat are closed except for three areas. Very limited vehicular access to three springs in the ACEC (Austin Spring, Mumford Spring and North Ruth Spring). Congress, in the Desert Bill, provided for a road through the ACEC for the Selene Project, a ground-based laser used to recharge satellites. This would be located on Navy Land on China Lake.

2. Motorized Vehicle Use off of Public Roads- -Vehicle use off public roads is prohibited in the Great Falls Basin ACEC.

3. Recreation Activities- -Hiking, Birdwatching, all occur on the ACEC**.**

4. Hunting and Shooting- -A portion of the Great Falls Basin ACEC is closed to shooting. Upland game bird hunting allowed (season doesn't overlap with towhee nesting season).

5. Vehicle-based Camping- -Allowed within area but must be at least 200 yards from springs, seeps, and other sources of surface water.

6. Motorized Vehicle Events - -Not permitted in Great Falls Basin ACEC.

7. Temporary Commercial Uses- - Not permitted in Great Falls Basin ACEC.

8. Utility Transmission- - Not permitted in Great Falls Basin ACEC.

9. Electric Power Production - -Not permitted in Great Falls Basin ACEC.

10. Mineral Exploration and Development - -None currently within the ACEC, but there is just outside.

11. Cattle/ Horse Grazing - -Not permitted in Great Falls Basin ACEC.

12. Sheep Grazing - -Not permitted in Great Falls Basin ACEC.

13. Wild Horses and Burros- -Existing burro removal program both on BLM and NAWS lands that contain Inyo California Towhee. NAWS and BLM have removed over 2,000 feral burros from the Argus Range and continue to remove burros annually, but a small number remain. All the springs receive some impact to the soil and vegetation from the remaining burros, though not at the historical level.

14. Wildland Fire Suppression- -Historically fires set to clear willows, but no recent evidence of this activity.

15. Residential, Commercial, Industrial- -Blocks of private land with residences adjacent to ACEC area.

16. Disposal of Federal Land - -One parcel with house exchanged for parcel at entrance to Indian Joe Canyon**.**

17. Water Diversion - -The following springs have water diversions: Alpha Spring, North Ruth Spring, Bainter Spring. All three springs did, however, have birds using them at times in 1992.

Proactive Programs of Benefit to the Long-term Conservation of Inyo California Towhee

1. Dedicated Ecological Reserve Areas- -Indian Joe Spring, (520 acres) was acquired by CDFG in 1993. Great Falls Basin ACEC was established in 1982 to protect Inyo California Towhee. Eight areas within the 8,730-acre Great Falls Basin ACEC have been designated critical habitat. The 74,890-acre Argus Wilderness is north of Homewood Canyon and provides restrictions on surface-disturbing activities which could affect towhee habitat.

2. Population Trend Monitoring- -There are surveys at about 5 year intervals. The latest survey was in 1999 on NAWS.

3. Research Projects- -Inyo California Towhee study by Denise LaBerteaux for Masters thesis looked at the morphology, foraging behavior, and nesting biology of the towhee in 1989.

4. Land Acquisition - -Land at mouth of Indian Joe Canyon acquired in exchange for parcel with house.

5. Fencing- -Christmas Spring fenced, others not needed if the burro population is under control.

6. Habitat Restoration- -Upper Ruth Spring barricaded from OHV, and there have been plantings of willow.

7. Law Enforcement- -Irregular ranger patrols of area. Level of compliance with off-road vehicle users is fair.

LEAST BELL'S VIREO

Regional Summary of Least Bell's Vireo

Fed: Endangered **State**: Endangered	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Breeding in several places in the WMPA (see below), otherwise occurring as an occasional migrant; occurs in cismontane southern California on the western edge of the deserts, extending north up the Mojave River into the Owens Valley, and east into Death Valley National Park, Amargosa River, and Fort Piute.	Total population within the WMPA is 1 - 2 pairs along the Mojave River and 1 - 3 pairs at Morongo Valley and 1 pair in Leona Valley; arrives on breeding grounds in mid-March, showing a high degree of nest site tenacity; most individuals depart by September with a few remaining into late November; nesting occurs from early April through the end of July; typically breeds in willow riparian forest supporting a dense, shrubby understory of mulefat and other mesic species; oak woodland with a willow riparian understory may be used; avoids riparian areas dominated by salt cedar.	Foraging: Feeds almost exclusively on arthropods, with insects and spiders comprising 99% of their diet.
Jurisdictional Occurrence:(1) Palmdale; (2) Apple Valley; (2, 5) Victorville; (3, 4) San Bernardino County; (3) BLM, (6) CDFG.		
WMPA Locations:(1) Ritter Ranch; (2) Mojave River near fish hatchery; (3) Afton Canyon ACEC, Covington Park, Morongo Valley, Cushenbury Springs; (4) Mojave Narrows Regional Park; (5) Mojave River west of I-15; (6) Camp Cady WA.		
Committed Long-term Management: Afton Canyon ACEC, Big Morongo Canyon Preserve, Camp Cady WA.		
Threat Analysis: Nesting and foraging individuals: Loss of nesting habitat and brood parasitism by Brown-headed Cowbird are responsible for this species being listed as endangered by the regulatory agencies; habitat loss in the WMPA probably most often results from flood control efforts. Population trends: "Critically endangered" with a total population estimated to be only a few hundred pairs; populations have increased dramatically at Prado Basin and Santa Margarita River (well south of the WMPA), apparently in response to restoring riparian habitats and removing Brown-headed Cowbirds; prospects for survival are much better now than they were 15 to 20 years ago when recovery was initiated.		
Management Policies: BLM: Seasonal restrictions are required in known nesting areas. Mitigation is required for flood control activities along the Mojave River which has and is planned to include: cowbird trapping, saltcedar control, OHV education, and interagency intensive enforcement at key times.		

Major Information Sources: Michael Patten, Department of Biology, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

LE CONTE'S THRASHER

Regional Summary of Le Conte's Thrasher

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
A major portion of the species' range is in California, and the WMPA covers a large portion of the State's range; found in open desert scrub throughout the WMPA in flats, washes, and alluvial fans, on sandy and/or alkaline soils; rarely found on rocky soil, hillsides, in riparian vegetation, or on agricultural lands; not found in urban or dense residential areas, but may occur in areas near scattered residences.	Nests placed in cacti, thorny shrubs, or small trees; creosote bush does not provide structure needed for nesting, thus, does not usually occur in stands of monotypic creosote bush scrub; where available, prefers silver cholla; also prefers habitats along washes for nesting; pairs usually nest in the same area year after year; incubation is about 15 days with young fledging 15 days later; eggs have been recorded from 22 January through 24 June.	Foraging: Young thrashers are fed insects, spiders, and small lizards; forages by digging and probing in the soil; other items are gleaned from vegetation or pursued along the ground; diet consists of arthropods, small lizards, small snakes, and a few seeds.
Jurisdictional Occurrence: BLM, California City, China Lake NAWS, JTNP, Kern County, Los Angeles County, Ridgecrest, San Bernardino County, State Parks, CDFG, Edwards AFB. Resident throughout the WMPA.		
WMPA Locations: All jurisdictions throughout WMPA.		
Committed Long-term Management: Camp Cady WA, Hinkley CE, King Clone ER, West Mojave Desert ER; Red Rock Canyon State Park, Saddleback Butte State Park; Black Mountain Wilderness, Harper Dry lake ACEC, Juniper Flats ACEC, Cronese Lakes ACEC, Rainbow Basin ACEC, Big Morongo Canyon Preserve, Jawbone/Butterbredt ACEC, Sand Canyon ACEC, Short Canyon ACEC, Desert Tortoise Natural Area, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness.		
Threat Analysis: Nesting and foraging individuals: Commercial, industrial, residential, and agricultural development all pose threats to the species; to a lesser degree, recreational activities may impact thrashers; off-road vehicle use during the nesting season could be detrimental to thrashers; fire may now be a threat due to invasion of non-native grasses; more study is needed to determine effects of military operations on the species; Common Raven is known to take eggs and young birds; cowbird parasitism rarely occurs; there is one record of parasitism by Bronzed Cowbird. Population trends: Species, which has a relatively small range for a passerine, has declined in many areas due to urban and agricultural development; notable areas of decline in California include San Joaquin Valley, Coachella Valley, and Imperial Valley; populations appear to be stable in undisturbed portions of the species range; absent from some areas of seemingly suitable habitat.		
Management Policies: BLM: Cattle/ Horse Grazing: Grazing occurs within this species' habitat (Ord Mountain, Cronese, Rudnick and Harper Allotments). Sheep Grazing: Grazing occurs within this species' habitat (Stoddard Mountain, Gravel Hills, Buckthorn Canyon and Superior Valley Allotments).		

Major Information Sources: Brian G. Prescott, 6737 Rycoff Dr., Riverside, California 92506; BLM - Barstow and Ridgecrest Resource Area staff; CDFG staff; Ca. State Parks staff.

LOGGERHEAD SHRIKE

Regional Summary of Loggerhead Shrike

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Expected virtually anywhere in the WMPA except the centers of the largest and most barren dry lake beds.	Distribution in the WMPA may be limited primarily by the presence of adequate nesting sites and foraging posts; egg-laying is from early February through June with a peak in April.	Foraging: Prey items generally include arthropods and small to medium-sized vertebrates; occasionally forages on carrion, including road kills; prey base does not seem to be a limiting factor. Habitat Preferences: Densely timbered areas and chaparral are avoided; very widespread in open and semi-open habitats; suitable hunting perches are very important.
Jurisdictional Occurrence: Occurs in all jurisdictions.		
WMPA Locations: Everywhere in WMPA.		
Committed Long-term Management: Harper Dry Lake ACEC, Cronese Lakes ACEC, Rainbow Basin ACEC, Afton Canyon ACEC, Big Morongo Canyon Preserve, Sand Canyon ACEC, Jawbone/Butterbredt ACEC, Short Canyon ACEC, Rand Mountains/ Fremont Valley Management Area, Desert Tortoise Natural Area, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness, Grass Valley Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness; JTNP; Red Rock Canyon State Park, Saddleback Butte State Park; Camp Cady WA, Hinkley CE, King Clone ER, West Mojave Desert ER.		
Threat Analysis: Nesting and foraging individuals: One study indicates that primary causes of direct mortality are due to inclement weather (especially to nestlings), predation, and collisions with vehicles and manmade objects; American Kestrels and Common Ravens may compete with and predate shrikes; nest parasitism by Brown-headed Cowbirds is not considered a threat; there is no evidence of shooting and direct persecution, although these affects are difficult to ascertain. Population trends: Population declines have been most severe in the eastern United States; data indicate a significant negative trend in much of the west, including the Mojave Desert, although there is no specific data for the WMPA; it appears that there is a slight increase in the total number in the WMPA in winter.		

Major Information Sources: Kurt F. Campbell, Campbell BioConsulting, 40950 Via Media, Temecula, California 92591; BLM - Barstow and Ridgecrest Resource Area staff; Joshua Tree National Park staff; CDFG staff; Ca. State Parks staff.

LONG-BILLED CURLEW

Regional Summary of Long-billed Curlew

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
In the WMPA, occurrence is directly correlated with alfalfa fields; wintering in California in San Joaquin Valley, the Imperial Valley, portions of the West Mojave, and (locally) in coastal estuaries; primarily a migrant and winter visitor in the WMPA, where it moves through the desert in wedge-shaped flocks during July, August, and September; most wintering birds depart by early May; frequents open habitats: wet meadows, grasslands, agricultural fields, sewage ponds, shallow wetlands, shallow marshes with adjacent fields.	None. A solitary or loosely colonial nester, usually near lakes or marshes, from mid-April to September; in California, nests in Siskiyou, Modoc, and Lassen Counties and irregularly near Big Pine in Inyo County; breeding habitat characterized as wet meadows and grasslands with lakes or marshes nearby.	Foraging: Long bill is used to probe muddy and sandy substrates for prey; coastal food items include mud crabs, ghost shrimp, mud shrimp, gem clams, and insect pupae; inland, curlews eat insects, worms, spiders, crayfish, berries, snails, and small crustaceans.
Jurisdictional Occurrence: (1) Lancaster; (2) Edwards AFB; (3, 4) BLM; (3, 4) San Bernardino County; Los Angeles County.		
WMPA Locations: (1) Lancaster, Lancaster sewage ponds; (2) Piute Ponds; (3) Harper Dry Lake; (4) East Cronese Lake.		
Committed Long-term Management: (3) Harper Dry Lake ACEC; (4) Cronese Lakes ACEC; Afton Canyon ACEC; Antelope Valley Poppy Reserve, Ripley Desert Woodland State Park.		
Threat Analysis: Nesting and foraging individuals: Greatest threat is changing agricultural practices, including loss of alfalfa fields to urbanization. Population trends: No longer breeds in several midwestern states where it formerly bred; 4,490 individuals counted at Salton Sea in 1987 is the largest number of birds seen in North America in the last 10 years; data indicate a perhaps insignificant decline in the last nine years, but census effort in the habitat may be highly variable from year to year.		
Management Policies: The INRMP at Edwards AFB is compatible.		

Major Information Sources: Chet McGaugh, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff; Ca. State Parks staff.

LONG-EARED OWL

Regional Summary of Long-eared Owl

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Moderate winter influxes in California occur most strongly and conspicuously in the desert; not usually found over 5,900 feet elevation; habitat is "typically, bottomlands grown to tall willows an cottonwoods;" adjacent open lands with abundant prey is required.	Most of the 19 records found in the WMPA appear to be breeding or possible breeding records; not clear if breeding birds are resident, although most of the well-known breeding areas have winter records as well; no evidence that they construct nests, rather using nests of birds such as Common Raven, American Crow, and Cooper's Hawk; nesting is from February through mid-May with fledging occurring from April through June; roosts or nests in willows, cottonwoods, junipers, oak, tamarisk, elms, California fan palms, and conifers.	Activity: One of the most strictly nocturnal of all owls. Foraging: Voles are the dominant prey in many areas; other prey items have included pocket mice, kangaroo rats.
Jurisdictional Occurrence: JTNP; Ca. State Park; CDFG; BLM.		
WMPA Locations: Mojave River around Victorville, Indian Joe Canyon, Hesperia, Mountain Springs Canyon in China Lake, Afton Canyon ACEC, Big Morongo Canyon Preserve, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness, Grass Valley Wilderness, Harper Dry Lake ACEC, near Helendale, Jawbone/Butterbredt ACEC, Kane Spring (Ord Mountain area), Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness, Sand Canyon ACEC (in winter when they are residents of the digger pine woodland areas) and Short Canyon ACEC.		
Committed Long-term Management: JTNP (likely breeder in some places); Red Rock Canyon State Park; Indian Joe Spring ER; Harper Dry Lake ACEC, Afton Canyon ACEC, Big Morongo Canyon Preserve, Sand Canyon ACEC, Jawbone/Butterbredt ACEC, Short Canyon ACEC, Desert Tortoise Natural Area, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness, Grass Valley Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness.		
Threat Analysis: Nesting and foraging individuals: Its occurrence in artificial plantings near structures may indicate its tolerance of human activity; direct persecution and environmental toxins do not appear to be a substantial problem in North America; in the WMPA, habitat degradation and disturbance at roosts are potential threats; forage areas may be adversely affected by grazing, erosion, off-road vehicle activity, and human development including agriculture; an increase in ravens and Great Horned Owls within the planning area may provide more suitable nests but are also known predators of Long-eared Owls. Population trends: Based on existing data, it appears that the total number is greater during the winter than during the summer and that its status, including population trends, is poorly known.		

Major Information Sources: Kurt F. Campbell, Campbell BioConsulting, 40950 Via Media, Temecula, California 92591; Ca. State Parks staff; CDFG staff; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

MOUNTAIN PLOVER

Regional Summary of Mountain Plover

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Species does not breed in California, but 70% of the continental population (7,000 of the estimated 10,000 birds in 1994) winters in the State; recorded annually in fall and winter on agricultural lands east of Lancaster and at Harper Dry Lake; occurs rarely in late July, arriving mostly in mid-October or later (peak in mid-November to early February); almost exclusively associated with plowed or disced fields and fallow, harvested, or grazed alfalfa fields.	Nest is a shallow depression in the ground, often lined with plant material.	Foraging: Opportunistic flocks range widely in search of large insects (especially grasshoppers) and other invertebrates. Wintering: Main wintering areas are Sacramento, San Joaquin, and Imperial Valleys; smaller numbers in west Mojave Desert; may occur irregularly on dry lakebeds throughout the Mojave Desert. Roosting: Night roosting habitat occurs in plowed, heavily grazed, and recently burned fields.
Jurisdictional Occurrence: Edwards AFB; Lancaster; BLM; San Bernardino County; Kern County; Los Angeles County.		
WMPA Locations: Piute Ponds; Lancaster sewage ponds; three and five miles east of Lancaster; four miles northwest of Alpine Butte; Harper Dry Lake; Lucerne Valley.		
Committed Long-term Management: Harper Dry Lake ACEC.		
Threat Analysis: Nesting individuals: Threats include natural predation, severe weather during the nesting/fledging period, direct persecution by humans, and loss of habitat; changing agricultural practices on breeding grounds. Foraging individuals: Changing agricultural practices may affect the species: cessation of alfalfa farming near Harper Dry Lake may render the area unsuitable for wintering flocks; there is no evidence that their exposure to agricultural pesticides is adversely affecting the reproductive success or survival of the species. Population trends: There has been a 3.7% reduction per year from 1966 to 1993 for this species in all breeding areas; declines may represent problems in migration or in wintering areas and/or the continuation of long-term declines in breeding areas; the species has been determined to be in serious decline, and is thus assigned to the National Audubon Society's *Watch List*.		
Management Policies: The INRMP at Edwards AFB is compatible.		

Major Information Sources: Chet McGaugh, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff.

NORTHERN HARRIER

Regional Summary of Northern Harrier

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Widespread migrant and winter visitor through California; fall migrants first noted in late August (mainly September and October); wintering birds present through March and often until mid-April; migrants and wintering birds use both wetlands (marshes) and a variety of upland habitats, occurring primarily in agricultural areas (especially alfalfa) in the desert.	Regular breeding is limited to Piute Ponds and Harper Dry Lake; at least three pairs are suspected to nest at Piute Ponds; breeding population at Harper Dry Lake estimated at two to four pairs; they are ground nesters, occupying extensive bulrush marshes and adjacent dense, wet grasses and sedges bordered by saltbush; eggs are incubated for 30 days and the young fledge in another 30 days; may nest after wet years on agricultural and grassland areas throughout the WMPA.	Foraging, roosting: Fly within a few feet of the ground during foraging; diet usually dominated by rodents; one study found 80% of diet consisted of marsh-dwelling birds, such as blackbirds; diet similar to that of Short-eared Owl.
Jurisdictional Occurrence:(1, 5, 6, 13) BLM; (1, 2, 6, 10, 11) San Bernardino County; (3, 7) Edwards AFB; (4) Los Angeles County; (5) Kern County; (8) China Lake NAWS; (9, 11) Hesperia; (10, 11, 12) Victorville; (11) Apple Valley; CDFG; State Parks; JTNP.		
WMPA Locations: (1) East Cronese Lake (non-breeding); (2) Solar One Complex, Daggett (sighting); (3) Edwards AFB (18 sightings); (4) three miles west of Saddleback Butte State Park (possible breeding); (5) Koehn Dry Lake (breeding); (6) Harper Dry Lake ((breeding and year round activity- 15 nesting pairs once); (7) Piute Ponds (not inclusive of above sightings; breeding); (8) China Lake NAWS sewage ponds (possible breeding); (9) Hesperia; (10) Mojave Narrows; (11) Mojave River Valley; (12) Victorville, (13) Afton Canyon ACEC, Big Morongo Canyon Preserve, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Desert Tortoise Natural Area, El Paso Mountain Wilderness, Fishhook Cactus ACEC, Golden Valley Wilderness, Grass Valley Wilderness, near Helendale, Jawbone/Butterbredt ACEC, Kane Wash, Rand Mountains/ Fremont Valley Management Area (including Koehn Lake), Sand Canyon ACEC, Short Canyon ACEC, and Stoddard Valley.		
Committed Long-term Management:(1) Cronese Lakes ACEC; (6) Harper Dry Lake ACEC; Afton Canyon ACEC, Big Morongo Canyon Preserve, Jawbone/Butterbredt ACEC, Short Canyon ACEC, Sand Canyon ACEC, Desert Tortoise Natural Area, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Golden Valley Wilderness, Grass Valley Wilderness, Owens Peak Wilderness; JTNP; Camp Cady WA.		
Threat Analysis: Nesting and foraging individuals: Threatened by draining of wetlands, implementation of monoculture farming, and reforestation of open farmlands; in the WMPA, the loss of marsh habitats and other disturbances (burning, plowing, or disking of grasslands during the breeding season) are the biggest threats; eggshell thickness reduction has been attributed to organochloride pesticides; known predators include feral dogs, Coyote, Raccoon, Striped Skunk, Red Fox, and Common Raven. Population trends: In California, species is a local and declining breeder, more often seen as a fall migrant and winter visitor; 13,200 birds are estimated to winter in California; North American populations have declined during the twentieth century; data suggest declines in southwestern populations since the early 1960's.		
Management Policies: The INRMP at Edwards AFB is compatible.		

Major Information Sources: Kimball L. Garrett and Kathy C. Molina, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; Joshua Tree National Park staff; CDFG staff; Ca. State Parks staff; BLM - Barstow and Ridgecrest Resource Area staff.

PRAIRIE FALCON

Regional Summary of Prairie Falcon

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Found throughout the WMPA, with nest sites restricted to mountainous areas with rock cliff faces; those breeding in southern California are resident, although birds wander from natal areas during the winter; requires inaccessible cliffs for nesting and open country with adequate prey base for hunting.	Three high-density nest locations include Red Mountain/El Paso Mountains, Robber's Roost, and Newberry Mountains/Granite Mountains; mostly nests on cliffs, with few reports of nests in trees; lays eggs from March 1 through May 25 (peak in April 6 - 15); incubates for 31 days, followed by nesting period of 36 - 41 days; uses same nest territory, often the same nest, year after year.	Foraging: Falcons eat sparrows, quail, horned larks, blackbirds, and doves; in some areas, small mammals are a majority of prey and cottontails and jackrabbits are occasionally taken; Horned Lark, Mourning Dove, Valley Pocket Gopher, and Desert Woodrat were present at 48 to 50% of the nests in 19 Mojave Desert nest sites; one study in the west Mojave Desert shows a home range of 41.6 mi^2.
Jurisdictional Occurrence: Occurs in all jurisdictions.		
WMPA Locations: Nests: Eagle's Crag and Argus Mountains (China Lake NAWS), El Paso Mountains, Granite Mountains, Great Falls Basin ACEC, JTNP, Mojave B Range (China Lake NAWS), Newberry Mountains, Rainbow Basin Natural Area, Red Mountain, Robber's Roost.Afton Canyon ACEC, Black Mountain, Cady Mountains, Ord & Rodman Mountains south of Barstow (numerous nests), Coso Range Wilderness, Cronese Lakes ACEC, Argus Mountains Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Great Falls Basin ACEC, Jawbone/Butterbredt ACEC, Kane Wash, and Trona Pinnacles ACEC.		
Committed Long-term Management: JTNP; Trona Pinnacles ACEC, Cronese Lakes ACEC, Great Falls Basin ACEC, Jawbone/Butterbredt ACEC, Cady Mountains WSA, Black Mountain Wilderness, Newberry Wilderness, Rodman Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, El Paso Mountain Wilderness, Argus Mountains Wilderness; Antelope Valley Poppy Reserve, Red Rock Canyon State Park, Ripley Desert Woodland, Saddleback Butte State Park; Camp Cady WA, Hinkley CE, King Clone ER, West Mojave Desert ER.		
Threat Analysis: Nesting individuals: May be disrupted by rock climbers, particularly in Joshua Tree National Park; legal taking of nestlings, authorized by the California Department of Fish and Game, is reported at 3 to 18 annually; eggshell thinning due to ingestion of pesticides in prey species (more so birds than mammals) may be a problem in agricultural areas; mining in proximity to nesters may pose a problem; in Idaho, Great Horned Owls are responsible for about half of the mortalities in the fledgling dependence period. Foraging individuals: Shooting was historically a primary cause of mortality and may still remain a threat; electrocution from distribution and transmission lines is not a problem, although uninsulated jumper wires and bushings may be. Population trends: Statewide censuses have not exceeded 3,700 pairs; the Mojave Desert has the greatest density of breeding Prairie Falcons; no longer breeds in most mountains surrounding the Central Valley; no recent information is available on overall changes in nesting territory utilization within the WMPA.		
Management Policies: BLM: Cattle/ Horse Grazing: Grazing occurs within this species' habitat. The current management at China Lake NAWS is compatible.		

Major Information Sources: Lawrence F. LaPré, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; CDFG staff; Joshua Tree National Park staff; Ca. State Parks staff; BLM - Barstow and Ridgecrest Resource Area staff.

SHARP-SHINNED HAWK

Regional Summary of Sharp-shinned Hawk

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Does not breed within the WMPA, occurring primarily as a winter visitor or migrant; it is a common winter visitor in southern California and a scarce summer resident in mountainous regions; not uncommon to find them at lower elevations in desert scrub, desert washes, Joshua tree woodland, and other vegetation; water and shelter are probably the limiting factors for prey species in the WMPA, and may therefore determine the distribution of this hawk.	None. Nests in large forests composed of conifer, deciduous, or mixed woodlands with a closed canopy dense enough that the nest is completely hidden.	Foraging: Uses most habitats with vegetative cover, avoiding bare areas and extensive openings; avoids open valley floors by staying in montane forests at higher elevations where both prey and roosts are more available. Roosting: Riparian areas are probably the most important habitat on wintering grounds, providing foraging opportunities and roost sites for avian predators and prey species.
Jurisdictional Occurrence: All jurisdictions in the planning area.		
WMPA Locations: Widespread in winter.		
Committed Long-term Management: JTNP; Antelope Valley Poppy Reserve, Red Rock Canyon State Park, Ripley Desert Woodland, Saddleback Butte State Park; Camp Cady WA; Sand Canyon ACEC, Big Morongo Canyon Preserve, Juniper Flats ACEC, Afton Canyon ACEC, Harper Dry Lake ACEC, Jawbone/Butterbredt ACEC, Short Canyon ACEC, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness.		
Threat Analysis: Nesting and foraging individuals: Habitat destruction (logging in forested areas and development in southern California), pesticide contamination, and shooting are probably primary threats; logging is a greater threat to breeding populations than wintering populations; hunting at backyard bird feeders, which is common for the species, results in higher incidence of collisions with windows, predation by domestic pets, and persecution by homeowners; pesticides and other agricultural chemicals may pose a significant hazard in the WMPA; shooting and falconry, which are potential threats, are not considered significant. Population trends: There is no evidence of a decline in migratory populations of Sharp-shinned Hawks in the western United States; they are seen in small but consistent numbers in winter, which may be somewhat biased since censuses tend to emphasize areas of high bird species diversity and density.		

Major Information Sources: Paul Grindrod, HawkWatch International, P.O. Box 660, Salt Lake City, Utah 84110; BLM - Barstow and Ridgecrest Resource Area staff.

SHORT-EARED OWL

Regional Summary of Short-eared Owl

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Occurs mostly in southern California from late October through early March; uncommon and local winter visitor on the coastal slope, and generally rare on the deserts, with occasional concentrations reported.	The only nesting reported in the WMPA was at Harper Dry Lake, where as many as 12 birds were present in April and May and three active nests were found; nests on the ground among herbaceous ground vegetation; in the WMPA, may nest at freshwater marshes or agricultural lands including alfalfa fields; suspected but not confirmed six miles east of Lancaster; generally nest as widely-dispersed pairs; pair formation occurs as early as mid-February with courtship behavior noted as late as June; eggs are generally laid in April with young fledging in May.	Foraging: Mammal prey constitutes 99% of the diet; prey includes voles, gophers, other rodents, shrews, and moles; in proximity to waterbird nesting colonies, may take recently-fledged birds; sometimes noted at garbage dumps. Roosting: Generally a communal rooster, with one account of 20 birds in the WMPA, although numbers are typically lower.
Jurisdictional Occurrence:(1, 3, 4) BLM; (1, 4, 9) San Bernardino County; (2, 6) Edwards AFB; (3) Kern County; (5, 7) Los Angeles County; (8, 11) Lancaster; (10) China Lake NAWS; CDFG; Ca. State Parks.		
WMPA Locations:(1) East Cronese Lake (20 observed November 1978); (2) Edwards AFB (3 undated sightings); (3) Koehn Dry Lake (sighting); (4) Harper Dry Lake (nests and over 200 owls have been observed at one time); (5) Apollo Lake (migrant); (6) Piute Ponds (one summer and winter sighting); (7) six miles east of Lancaster (possible nesting pair); (8) three birds noted adjacent to Fox Field, northeast of Lancaster; (9) four south of Kelso in October 1978; (10) occasional winter visitor and rare transient at China Lake NAWS; (11) two in alfalfa fields west of Lancaster in November 1986.		
Committed Long-term Management: (1) Cronese Lakes ACEC; (4) Harper Dry Lake ACEC; Jawbone/Butterbredt ACEC; Antelope Valley Poppy Reserve, Ripley Desert Woodland; Camp Cady WA.		
Threat Analysis: Nesting and foraging individuals: Eliminated as a breeder from southern California's coast before the middle of the 20th century; primary threats are shooting by waterfowl hunters and habitat loss and degradation; susceptible to collisions with automobiles; the destruction of marshes and tall grassland habitat is a main cause of decline; Common Ravens may impact breeding attempts in the region; little evidence that pesticides are adversely affecting the species. Population trends: Significant declines have been documented in northeastern United States, Oregon, southern Idaho, and south-central Washington; the same data suggests non-significant increases in California populations, although sample sizes are low.		
Management Policies: The INRMP at Edwards AFB is compatible.		

Major Information Sources: Kimball L. Garrett and Kathy C. Molina, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; Ca. State Parks staff; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

SOUTHWESTERN WILLOW FLYCATCHER

Regional Summary of Southwestern Willow Flycatcher

<table>
<tr><td>Fed: Endangered
State: Endangered</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Nesting</td><td>Foraging, Roosting</td></tr>
<tr><td>Rare breeder in southern California, arriving in the spring and leaving by early September; occurs principally along the South Fork of the Kern River, Santa Ynez River, Prado Basin, Santa Margarita River, and San Luis Rey River.</td><td>Arrives on breeding grounds in very late April through the third week of May, leaving by early September; breeds only in riparian woodland, with a canopy and understory of shrubs and saplings, typically adjacent to or over open water; historic egg collections indicate nesting in the following plant species: 86% in willows, 4% in stinging nettles, and 10% in other plants; on the San Luis Rey River, 92% of these nests found were in coast live oak; egg-laying begins as early as 24 May and may be as late as 31 July; incubation is 12 to 13 days, and the young fledge in 12 to 15 days; nest site fidelity is not absolute, so that birds may shift from site to site rather than return to the same location.</td><td><u>Foraging</u>: Diurnal insectivore, catching its prey on the wing usually in the middle story of riparian woodland.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: (1) BLM; (2) Victorville; (1, 3, 4) San Bernardino County; (5) CDFG.</td></tr>
<tr><td colspan="3">WMPA Locations:(1) Covington Park, Morongo Valley (nesting pair in 1981), Afton Canyon ACEC (outside the known historic range but currently 100 acres of suitable habitat occurs), Argus Range Wilderness, Bright Star Wilderness, Darwin Falls Wilderness, Great Falls Basin ACEC, Jawbone/Butterbredt ACEC, north slope of the San Bernardino Mountains (Grapevine Canyon, Arrastre Creek and Juniper Flats vicinity -about 340 acres of suitable habitat occurs), Kiavah Wilderness, Partin Mine (Arrastre Creek), Sacatar Trail Wilderness, Sand Canyon ACEC, Short Canyon ACEC, and along the Mojave River near Victorville; (3) Mojave Narrows Regional Park (territorial male in 1990); (2) Mojave River west of I-15 (potential breeding in 1994 and 1995); (4) Oro Grande (1 male collected in 1920); (5) Camp Cady WA, Indian Joe Spring ER.</td></tr>
<tr><td colspan="3">Committed Long-term Management:(1)Afton Canyon ACEC, Juniper Flats ACEC, Big Morongo Canyon Preserve, Great Falls Basin ACEC, Jawbone/Butterbredt ACEC, Sand Canyon ACEC, Short Canyon ACEC, Argus Range Wilderness, Bright Star Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Sacatar Trail Wilderness. (5) Camp Cady WA, Indian Joe Spring ER.</td></tr>
<tr><td colspan="3">Threat Analysis: <u>Nesting and foraging individuals</u>: Declines are attributed to loss/degradation of riparian habitats and parasitism by Brown-headed Cowbird; threats include loss of habitat to development and flood control, grazing, lowering of water tables; its very short breeding season heightens the species' sensitivity to disruption of reproduction activities. <u>Population trends</u>: Once considered widespread in riparian habitats, the species is now restricted to a few scattered populations; Mojave Desert has never been reported as an important region for this species, birds' use is sporadic, and habitat at present is considered marginally suitable.</td></tr>
</table>

<u>Major Information Source</u>s: Philip Unitt, San Diego Natural History Museum, P.O. Box 1390, San Diego, California 92112; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

SUMMER TANAGER

Regional Summary of Summer Tanager

Fed. None **State**. Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
In California, nests along Colorado River and at scattered locations throughout the desert; rare but regular migrant and winter visitor throughout southern California; usually arrives about 20 April and departs nesting grounds by mid- to late September.	All nests in riparian woodland or forests dominated by cottonwoods and willows, usually in a climax stage; those at Whitewater Canyon (2 - 4 pairs annually) nest in Siberian elms, other ornamentals, and Fremont cottonwoods; also occurs in athel along the Colorado River; nests just outside WMPA at Tecopa (15 miles northeast), Weldon (9.5 miles northwest), Whitewater Canyon (3 miles south), and Soledad Canyon (6 miles west).	Foraging: Insectivorous during the breeding season, specializing on bees and wasps; wintering and migrating birds regularly feed on fruit; captures insects be aerial hawking and gleaning from foliage or bark.
Jurisdictional Occurrence:(1) BLM; (1, 2, 6) San Bernardino County; (3) Los Angeles County; (4) Town of Yucca Valley; (5) Victorville; (5) Apple Valley; (8) Twentynine Palms; (9) CDFG.		
WMPA Locations: (1) Big Morongo Canyon; Afton Canyon ACEC, Argus Range Wilderness, Big Morongo Canyon Preserve, Bright Star Wilderness, Darwin Falls Wilderness, Jawbone/Butterbredt ACEC, Juniper Flats area, Kiavah Wilderness, and Sacatar Trail Wilderness. (2) Cushenbury Springs; (3) Big Rock Creek, Valyermo; (4) Yucca Valley Golf Course; (5) Kemper Campbell Ranch (Mojave Narrows) and west of railroad; (6) Mojave Narrows Regional Park; (7) Mojave River west of I-15; (8) Twentynine Palms; (9) Camp Cady WA.		
Committed Long-term Management: (1) Afton Canyon ACEC, Big Morongo Canyon Preserve, Juniper Flats ACEC, Jawbone/Butterbredt ACEC, Argus Range Wilderness, Bright Star Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Sacatar Trail Wilderness; (9) Camp Cady WA; (6) Mojave Narrows Regional Park.		
Threat Analysis: Nesting and foraging individuals: Conversion of riparian habitat to agricultural, residential, and recreational uses are the primary cause of decline; flood control, fires, lowered groundwater, invasion by non-native plant species (giant reed, salt cedar, Russian olive, etc.), and wood-cutting activities are also a threat; Brown-headed Cowbird parasitism is considered uncommon, only 1 of 16 nests parasitized at Weldon; effects of off-highway vehicle recreation, if any, are not known. Population trends: Species has extended its range in California over the past 40 to 50 years; along the Colorado River, now considered a rare to uncommon breeding bird, with greatly reduced numbers; elsewhere in California desert breeding locations, numbers appear to be stable or increasing.		

Major Information Sources: Stephen J. Myers, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff.

SWAINSON'S HAWK

Regional Summary of Swainson's Hawk

Fed: None **State**: Threatened	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Except for scattered, small populations, birds winter mostly in South America, primarily Argentina; historically bred in California on the Modoc Plateau, Sacramento and San Joaquin Valleys, coastal areas in Marin, Monterey, Ventura, Los Angeles, and San Diego Counties, and a few, scattered sites in the Mojave and Colorado Deserts; migrating flocks of more than 100 birds are occasionally seen during the spring and fall.	Nests in extremely low densities in desert scrub with an overstory of Joshua trees and in Fremont cottonwoods along stream courses or planted in windbreaks; nests almost exclusively in trees, where single trees surrounded by extensive fields and riparian areas are preferred; Joshua trees are used in the Mojave Desert; return to nest sites in early March to April; egg-laying to fledging has been reported at 99 to 110 days, with most birds fledging during July or August; 1988 survey estimated five breeding pairs in the Mojave Desert.	General: Unlike any other *Buteos* in the western U.S., migrates long distances, is highly gregarious, and largely insectivorous. Foraging: Forages over grass-dominated vegetation and relatively sparse shrublands; alfalfa is a crop routinely used for foraging; takes a variety of ground squirrels, jackrabbits, cottontails, small rodents (voles, pocket gopher, etc.), birds (Mourning Dove, Ring-necked Pheasant, etc.), lizards, snakes, amphibians, and insects (grasshoppers, crickets, dragonflies, etc.).
Jurisdictional Occurrence: All jurisdictions.(1, 3) Los Angeles County; (2, 5) BLM; (2, 4) San Bernardino County; (4) Victorville; (4) Adelanto; (4) Apple Valley; (4) Hesperia; (5) Kern County.		
WMPA Locations: (1) Five miles west of Saddleback Butte State Park (breeding); (2) four miles west of Helendale (breeding); (3) Antelope Valley (breeding); (4) Victor Valley (breeding); (5) Fremont Valley (possible breeding); migrating birds may occur in all areas of the WMPA during spring and/or fall.		
Committed Long-term Management: Harper Dry Lake ACEC, Juniper Flats ACEC; JTNP; Antelope Valley Poppy Reserve, Red Rock Canyon State Park, Ripley Desert Woodland; CDFG lands.		
Threat Analysis: Nesting and foraging individuals: Much of the historic habitat has been converted to either urban development or cultivated agricultural uses; some reasons for decline may include (1) mortality on wintering grounds in South America; (2) poisoning, including pesticides in South America; (3) eggshell thinning; (4) habitat loss on wintering grounds; (5) disturbance on breeding grounds; (6) loss or degradation of habitat on breeding grounds; and (7) increased competition with other species; other cited threats include loss of Joshua trees to urban and agricultural development, fires, off-highway vehicle traffic, shooting, flood control projects, and lowering water tables. Population trends: Still nests in most previously occupied regions, but the numbers of breeding birds has been greatly reduced and breeding populations been extirpated from coastal California; only the Modoc Plateau and Central Valley currently support more than a few isolated pairs; may be more common in areas of moderate cultivation than in either grassland or areas of extensive cultivation; considered a common and abundant breeder in California at the end of the 19th century, with only 375 pairs estimated in California in 1979; another estimate (1988) was 550 breeding pairs in the State; one estimate is that the species has declined by 90% in California.		
Management Policies: See below.		

Major Information Sources: A. Sidney England, 830 Donovan Ct., Davis, California 95616; Ca. State parks staff; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

Bureau of Land Management

Management of Land Uses in Relation to Long-term Conservation of Swainson's Hawk

1. Public Roads - -Public roads and routes exist within the Jawbone/Butterbredt ACEC (Kelso Valley) and other areas within Swainson Hawk nesting and foraging areas. Much of Swainson Hawk habitat is on private land.

2. Utility Transmission- - Transmission lines in foraging habitat, not in nesting habitat.

3. Electric Power Production -About 900 acres of BLM land have operational windmills and 1,500 more acres are authorized for wind development. Impacts would be primarily to migrating Swainson's Hawks.

4. Mineral Exploration and Development--There are few mining operations within the habitat of this species.

5. Cattle/ Horse Grazing --Cattle grazing allotments with Swainson's Hawk foraging and nesting habitat is primarily the Hanson Common and Rudnick Common Allotments. The allotments are covered by Allotment Management Plans (AMPs) and generally have set objectives in terms of vegetation. In the Kelso and Antelope Valley, most grazing would be on private land.

TRICOLORED BLACKBIRD

Regional Summary of Tricolored Blackbird

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Marshes along Mojave River, agricultural ditches with marsh vegetation. Antelope Valley, Mojave River	Highly colonial.	Most forage in agricultural fields near wetland nesting sites.
Jurisdictional Occurrence: Variable and sporadic nest colonies. CDFG; Barstow; Los Angeles County; BLM; San Bernardino County; Edwards AFB; Kern County; California City.		
WMPA Locations: Barstow sewage ponds, Lake Hughes, Camp Cady WA, Central Park in California City, High Desert Dairy, Holiday Lake, Rosamond Lake, Piute Ponds, Koehn Dry Lake and Harper Dry Lake ACEC(abandonment of agriculture on private lands adjacent to both Harper Dry Lake and Koehn Dry Lake has made both sites marginal for this species).		
Committed Long-term Management: Harper Dry Lake ACEC; Camp Cady WA.		
Threat Analysis: Nesting colonies very vulnerable to predation and human disturbance. Loss of wetlands, depletion of water supply to marshes and contamination by pesticides and selenium are known threats.		

Major Information Sources: Kurt F. Campbell, Campbell BioConsulting, 40950 Via Media, Temecula, California 92591; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

VAUX'S SWIFT

Regional Summary of Vaux's Swift

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Spring and fall migrant, with highest numbers in the spring; present from mid-April to late May (peak in early May) and from late August to mid-October (peak in late September); diurnal migrant, usually flying high; largest concentrations noted during severe storms.	None. Highest breeding densities occur in coastal northern and central California; nearest breeding occurs in southern Sierra Nevada in Tulare County; nests in hollow, live trees, residual snags, and to a lesser extent, chimneys.	Roosting: Roosts in burned trees, tree trunks, chimneys, barns, outbuildings, building shafts; no specific information for roost sites in the Mojave Desert. Foraging: Foraging is exclusively aerial and diurnal; may concentrate around lakes, reservoirs, wetlands during inclement weather.
Jurisdictional Occurrence: All jurisdictions during fall and spring migration.		
WMPA Locations: Big Morongo Canyon, Daggett, Edwards AFB, Harper Dry Lake, JTNP, Lake Palmdale, Pearblossom, Piute Ponds, Camp Cady WA, Hinkley CE, West Mojave Desert ER.		
Committed Long-term Management: All Wilderness Areas, Harper Dry Lake ACEC, Afton Canyon ACEC; JTNP; Camp Cady WA, Hinkley CE, West Mojave Desert ER.		
Threat Analysis: Nesting individuals: Nesters are affected by felling of old growth forests, changes in chimney design, and blocking chimney entrances. Foraging and roosting individuals: Vaux's Swift would be affected by loss of traditional roost sites, such as a single building shaft in Los Angeles where as many as 10,000 birds roost; over most of the WMPA there appear to be few or no threats; in severe storms, birds may be vulnerable to collisions with vehicles and stationary objects (buildings, towers, or guy wires). Population trends: Trends show sharp declines over much of the breeding range, as per Breeding Bird Survey data; no estimates of total population size are available.		

Major Information Sources: Kathy C. Molina and Kimball L. Garrett, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

VERMILION FLYCATCHER

Regional Summary of Vermilion Flycatcher

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Tropical species whose range barely extends northward to southwestern U. S.; local breeder in southern California; mainly a summer visitor to southwestern U.S.; regularly winters in Sonoran Desert and in cismontane southern California.	Breeding birds arrive by late February to early March and typically depart by late September; egg dates are from early March to early July; incubation is for 12 days and young typically fledge in about 14 days; two broods are frequent; nests in cottonwoods, sycamores, oaks, willows, mesquite, and palo verde; species invariably uses parkland and golf courses where they often nest in native or non-native trees.	Foraging: Partial to open areas, often perching in a conspicuous place frequently attempting to capture prey, which is almost entirely flying insects with occasional arthropods taken on the ground.
Jurisdictional Occurrence: (1) Los Angeles County; (2) Yucca Valley; (3) Apple Valley; (4, 5) San Bernardino County; (4) BLM; (6) Fort Irwin NTC; (7) Ridgecrest; (8) Twentynine Palms; (9) China Lake NAWS.		
WMPA Locations: (1) Ritter Ranch, Amargosa Creek (breeding); (2) Yucca Valley Golf Course (regular breeding since 1991); (3) Jess Ranch (breeding); (4) Covington Park, Afton Canyon ACEC, Arrastre Creek, Big Morongo Canyon ACEC (nesting) and north slope of the San Bernardino Mountains; (5) Mojave Narrows Regional Park (regular breeder); (6) Fort Irwin NTC (breeding); (7) Ridgecrest; (8) Twentynine Palms (likely historical breeding); (9) China Lake NAWS (1 pair in 1994).		
Committed Long-term Management: (4) Big Morongo Canyon ACEC; Afton Canyon ACEC; (5)Mojave Narrows Regional Park.		
Threat Analysis: Nesting and foraging individuals: Threats include habitat loss (e.g., tree cutting, conversion to urban and agricultural uses, etc.), parasitism by Brown-headed Cowbirds, predation by Western Scrub Jay, grazing. Population trends: Formerly a fairly common, widespread breeder throughout the Sonoran Desert and along the Colorado River, but now virtually unknown as a breeder in these places; no trend data available, but populations estimated to be fewer than 100 pairs in California; there may have been a recent move of the species from the Sonoran Desert to the Mojave Desert, with the possibility that the overall population in the State has not changed; the numbers of pairs and locales have increased in California during the 1990s; provided that parkland habitats with accessible water are retained in the WMPA, it is unlikely that the species will decrease or be extirpated from the region.		

Major Information Sources: Michael A. Patten, Department of Biology, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

VIRGINIA'S WARBLER

Regional Summary of Virginia's Warbler

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Rare breeder in California, from the White Mountains and locally on the eastern slope of the Sierra Nevada of Mono and Inyo Counties, south to the higher ranges of the east Mojave Desert; very rare spring migrant (mid-April through late May) through southern California, somewhat more numerous (though very uncommon) in fall (mid-August through early October); mostly found in the desert in riparian groves, desert woodlands, shade plantings around town, landscaped parks, and ranchyards, and occasionally microphyll woodlands.	None. A few pairs have been documented breeding just outside the WMPA (Clark Mountains); suitable breeding habitat occurs just south of the WMPA, in the San Bernardino and San Gabriel Mountains (San Bernardino and Angeles National Forests, respectively).	Foraging: Forages actively by gleaning adult and larval insects from twigs and leaves; most foraging is in brush and the lower portions of trees; migrants are usually observed foraging in low brushy or weedy habitats, especially in fall.
Jurisdictional Occurrence: Sporadic in migration at many riparian sites in WMPA. (1, 3) San Bernardino County; (2) Twentynine Palms Marine Corps Base; (3) Hesperia; (4, 8, 11, 17) BLM; (5, 8, 9) Kern County; (6, 7, 11, 13) Los Angeles County; (10) California City; (12) Palmdale; (14) China Lake NAWS; (15) JTNP; (16) CDFG.		
WMPA Locations:(1) Twentynine Palms Oasis; (2) one-half mile east of Mesquite Lake; (3) Summit Valley; (4) Butterbredt Spring (transient); (5) one mile north of Mojave (transient); (6) six miles west of Saddleback Butte State Park (transient); (7) one mile south of Saddleback Butte State Park (transient); (8) Koehn Dry Lake (transients); (9) Galileo Hill (transients); (10) California City Park (transients); (11) Holiday Lake; (12) Lake Palmdale (migrant); (13) six miles east of Lancaster (migrant); (14) China Lake sewage disposal pond (migrant); (15) JTNP; (16) Camp Cady WA; (17) Bright Star Wilderness, Jawbone/Butterbredt ACEC, Kiavah Wilderness, north slope of the San Bernardino Mountains (spring areas), Owens Peak Wilderness, Sacatar Trail Wilderness, Sand Canyon ACEC, and Short Canyon ACEC.		
Committed Long-term Management: Jawbone/Butterbredt ACEC, Sand Canyon ACEC, Short Canyon ACEC, Bright Star Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness; JTNP; Camp Cady WA.		
Threat Analysis: Nesting and foraging individuals: Potential threats are destruction of breeding habitat, especially forest fires caused by increased human recreation and density in montane woodlands and brushlands. Population trends: Some or most breeding populations in California have perhaps become established only during the latter half of the present century; populations generally stable, with cowbird parasitism occurring but not significantly impacting the species.		

Major Information Sources: Kimball L. Garrett and Kathy C. Molina, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

WESTERN SNOWY PLOVER

Regional Summary of Western Snowy Plover

Fed: Threatened **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Some nesting, mostly at dry lakes and marshes, with most departing for the winter; migrants and wintering birds are known, but mostly absent during winter; generally found at edges of dry lakes, salt evaporation ponds, alkali flats, diked sewage treatment ponds, etc.	Nest on certain playas (dry lakes) and other wetland areas within the WMPA (see below).	Foraging: Feed on brine flies, shrimp, polychaets, beetles, and other invertebrate prey. Wintering: Most Western Snowy Plovers winter in California.
Jurisdictional Occurrence: (1) China Lake NAWS; (2, 4, 5, 6, 12) BLM; (3, 4, 6, 7) San Bernardino County; (5) Kern County; (8, 10, 11) Edwards AFB; (9) Lancaster.		
WMPA Locations:(1) China Lake NAWS sewage ponds (wintering); (2) Searles Lake (presumed breeding); (3) Dale Lake (presumed breeding); (4) East Cronese Lake ACEC(wintering); (5) Koehn Dry Lake (breeding); (6) Harper Dry Lake ACEC - mudflats that are essential to snowy plover foraging (breeding-was considered to have one of the largest interior California breeding populations in the 1970's (Gene Cardiff pers. comm)); (7) Solar One Ponds, Daggett (presumed breeding); (8) Piute Ponds; (9) Lancaster sewage ponds; (10) southwest Rogers Lake (sewage ponds?) (wintering); (11) Rosamond Dry; (12)Superior Lake in wet years.		
Committed Long-term Management: (4) Cronese Lakes ACEC; (6) Harper Dry Lake ACEC.		
Threat Analysis: Nesting individuals: In coastal areas, eggs and young are susceptible to tidal inundation of low lying mudflats and sand bars; nests are vulnerable to human disturbance, pets, and off-road vehicles; common avian predators include gulls, Common Raven, and Northern Harrier; nests are vulnerable to foxes and feral dogs and cats; in the WMPA predators of eggs and young include Loggerhead Shrike, falcons, gulls, American Crow, and Common Raven. Population trends: Interior populations (including in WMPA) lack special status, and are considered separately from coastal populations, which declined sharply in the late 1980's; small, relatively stable breeding populations at China, Harper, Koehn, and Rosamond Dry Lakes between 1978 and 1988; U.S. breeding population recently estimated at 21,000 individuals; estimate of 9,800 breeding pairs in 1988-1989 is a 20% reduction compared to censuses taken a decade earlier; California populations of interior nesting plovers have experienced no net difference in the number of breeding plovers.		
Management Policies: The INRMP at Edwards AFB and current management at China Lake NAWS are compatible.		

Major Information Sources: Kathy C. Molina and Kimball L. Garrett, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, California 90007; BLM - Barstow and Ridgecrest Resource Area staff.

WESTERN YELLOW-BILLED CUCKOO

Regional Summary of Western Yellow-billed Cuckoo

Fed: None **State**: Endangered	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
The only sustained breeding populations are along the upper reaches of the Sacramento River and the South Fork of the Kern River; cuckoos generally arrive in California during June, and begin nesting shortly thereafter, and are generally gone from the area by mid-September.	No nesting records are known for the WMPA; unmated males have been observed during the breeding season between Victorville and Barstow; possibly breed along the Mojave River between Mojave Narrows and Helendale, although nesting has not been confirmed; suitable breeding habitat is also at Morongo Valley; species requires cottonwood-willow riparian habitat with high humidity and a breadth of 325 feet; optimal habitat is larger than 200 acres, wider than 1,950 feet, with canopy closure greater than 65%, and canopy height of 23 to 33 feet; on the Kern River, most nests were initiated in July and 99% were in willows; species rarely produces two clutches unless an abundant food supply is available.	General: Species could occur at any desert oasis with willows and cottonwoods, although few records for migrant cuckoos exist. Foraging: Primarily foliage gleaning insectivores, but also hover glean, hawk, and hop on the ground in pursuit of prey; prey items on the Kern River included 44.9% sphinx moth larvae, 23.8% tree frogs, 21.8% katydids, and 8.7% grasshoppers.
Jurisdictional Occurrence: San Bernardino County; BLM		
WMPA Locations: Mojave Narrows Regional Park; Mojave River near Hodge (1 unmated male); Afton Canyon ACEC, Jawbone/Butterbredt ACEC, and Kelso Creek.		
Committed Long-term Management: Afton Canyon ACEC; Jawbone Butterbredt ACEC; Mojave Narrows Regional Park.		
Threat Analysis: Nesting and foraging individuals: Population declines are attributed to loss and fragmentation of breeding habitat to agricultural uses, flood control, flooding behind dams, lowering of the water table, urban development, invasion of exotic plant species, intensive year-around grazing for more than 100 years, shooting, pesticide contamination, wood-cutting, and wildfire. Population trends: Statewide surveys in 1986-87 found 30-33 pairs and 31 unmated males; over the past 80 years the range has shrunk in size by approximately 50%; there is an estimated decline of 73 to 82% between 1977 and 1987; most of the decline in southern California came from a 95% decline on the Colorado River.		
Management Policies: See below.		

Major Information Sources: Stephen A. Laymon, Kern River Research Center, P.O. Box 990, Weldon, California 93283; BLM - Barstow and Ridgecrest Resource Area staff.

Bureau of Land Management

Management of Land Uses in Relation to Long-term Conservation of Western Yellow-billed Cuckoo

1. Public Roads --A paved road runs along Kelso Creek with dirt roads exiting.

2. Motorized Vehicle Use off of Public Roads--Vehicle use off public roads is prohibited along Kelso Creek.

3. Recreation Activities--Hiking, birdwatching, hunting, camping, motorcycle all occur in Kelso Creek.

4. Hunting and Shooting--Upland game bird hunting allowed in Kelso Creek, however, hunting season doesn't overlap with cuckoo nesting season.

5. Vehicle-based Camping --One area along Kelso Creek was closed to camping but most of the land is privately owned and campers may use other areas for camping.

6. Mineral Exploration and Development --Limited mining activity in Kelso Creek area.

7. Cattle/ Horse Grazing --Cattle grazing allotments with potential cuckoo foraging and nesting habitat include the Hanson Common and Rudnick Common Allotments. Kelso Creek does have cattle grazing. A riparian exclosure fence has been constructed at Afton Canyon ACEC.

8. Residential, Commercial, Industrial--The majority of Kelso Creek is private land with ranch houses scattered along the creek.

9. Water diversion - Axelson Spring has water diversions.

Proactive Programs of Benefit to the Long-term Conservation of Western Yellow-billed Cuckoo

1. Dedicated Ecological Reserve Areas - - Afton Canyon ACEC and Jawbone/Butterbredt ACEC.

2. Fencing-- A riparian exclosure fence has been constructed at Afton Canyon ACEC.

3. Habitat Restoration --Continued riparian restoration/saltcedar control is planned at Afton Canyon ACEC and should benefit this species.

4. Law Enforcement --BLM law enforcement rangers and two park rangers patrol the Jawbone/Butterbredt ACEC area on a regular basis.

YELLOW-BREASTED CHAT

Regional Summary of Yellow-breasted Chat

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
In California, nests locally in riparian habitats the length of the State, including several widely-scattered locations; in the WMPA uncommonly observed during spring migration, and rarely observed during fall; they have not been reported during the winter in the WMPA.	Species has nested at only five known locations in the WMPA (see below); 6 to 10 pairs nest annually on the Mojave River in Victorville; arrives on breeding ground in mid-April, and has been recorded as late as 29 September; Fremont's cottonwoods and large willows generally form canopies at breeding sites; occurs in riparian woodland, forest, and scrub dominated by cottonwoods, willows, arrow weed, and mulefat; dense understory and larger trees are required.	Foraging: Diet comprised of insects, including beetles, bugs, ants, weevils, bees, wasps, mayflies, and caterpillars, and wild fruit such as elderberries, blackberries, and grapes.
Jurisdictional Occurrence: (1, 5) BLM; (1, 2, 5, 7, 8, 9) San Bernardino County; (3, 6, 8) Apple Valley; (3, 6, 8) Victorville; (4) CDFG.		
WMPA Locations: (1) Big Morongo Canyon (2 to 7 pairs breed annually); (2) Cushenbury Springs (1 pair breeds sporadically); (3) Mojave River near fish hatchery (annually breeding); (4) Camp Cady WA (2 pairs breeding in 1985); (5) Afton Canyon (1 pair breeding in 1977); (6) Kemper Campbell Ranch (Mojave Narrows) (annually breeding); (7) Mojave Narrows Regional Park (annually breeding); (8) Mojave River east and west of I-15 (annually breeding); (9) Yermo (historical nesting) (10) Bright Star Wilderness, Darwin Falls Wilderness, Jawbone/Butterbredt ACEC, Kiavah Wilderness, Sacatar Trail Wilderness, Sand Canyon ACEC (spring migrants to the riparian-willow areas), and Short Canyon ACEC.		
Committed Long-term Management: Afton Canyon ACEC, Jawbone/Butterbredt ACEC, Sand Canyon ACEC, Short Canyon ACEC, Bright Star Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Sacatar Trail Wilderness, Big Morongo Canyon ACEC; Camp Cady WA; Mojave Narrows Regional Park.		
Threat Analysis: Nesting and foraging individuals: Reasons for local declines are noted as urbanization, flood control activities, and cowbird parasitism; other threats include cattle grazing, lowering of ground water, fire, wood-cutting, invasion of non-native plant species; there are few, if any, data on the effects of off-highway vehicles on nesting chats, although birds are known to leave areas at Afton Canyon in response to vehicle use of the area. Population size: Western populations are generally considered to be stable, with some local declines; appears to be stable at Morongo Valley and increasing along the Mojave River since 1987.		

Major Information Sources: Stephen J. Myers, Tierra Madre Consultants, Inc., 1159 Iowa Avenue, Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff; CDFG staff.

YELLOW WARBLER

Regional Summary of Yellow Warbler

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Nesting**	**Foraging, Roosting**
Commonly observed migrant on the Pacific slope, deserts (including all of the WMPA), and interior valleys of California; generally occurs in riparian woodland or forest dominated by cottonwoods and willows; although some nesting occurs in the spring, the species also migrates through the area during the spring (peak in first half of May) and fall (peak during September).	Only known to nest at four locations (see below); 8 to 12 pairs nest annually along the Mojave River in Victorville; arrive on breeding grounds at the end of March or first of April; all four breeding locations in the WMPA contain cottonwoods and willows; nesting habitat must contain dense understory vegetation.	Foraging: Primarily eats insects, which it gleans from foliage.
Jurisdictional Occurrence: (1) BLM; (1, 6 ,7) San Bernardino County; (2) Los Angeles County; (3, 5, 7) Apple Valley; (3, 5, 7) Victorville; (4) CDFG; (8) Palmdale; (9) CDFG; (10) Ca. State Parks.		
WMPA Locations: (1) Big Morongo Canyon (1 to 6 pairs annually breeding), Afton Canyon ACEC, Argus Range Wilderness, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Great Falls Basin ACEC, Harper Dry Lake ACEC, Jawbone/Butterbredt ACEC, Juniper Flats Spring, Kane Spring, Kiavah Wilderness, Owens Peak Wilderness, north slope of the San Bernardino Mountains, Sacatar Trail Wilderness, Sand Canyon ACEC, Short Canyon ACEC; (2) Big Rock Creek, Valyermo (1 to 2 pairs annually breeding); (3) Mojave River near fish hatchery (annually breeding); (4) Camp Cady WA (1 pair bred in 1985); (5) Kemper Campbell Ranch (Mojave Narrows) (annually breeding); (6) Mojave Narrows Regional Park (annually breeding); (7) Mojave River east and west of I-15 (annually breeding); (8) Lake Palmdale (77 migrants observed there on 13 September 1992).		
Committed Long-term Management: (1) Big Morongo Canyon ACEC, Sand Canyon ACEC, Great Falls Basin ACEC, Jawbone/Butterbredt ACECS, Short Canyon ACEC, Afton Canyon ACEC, Juniper Flats ACEC, Argus Range Wilderness, Bright Star Wilderness, Coso Range Wilderness, Darwin Falls Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sacatar Trail Wilderness; (4) Camp Cady WA; (10) Red Rock Canyon State Park.; Mojave Narrows Regional Park.		
Threat Analysis: Nesting and foraging individuals: Habitat destruction and parasitism by Brown-headed Cowbirds are the primary threats; habitats have been lost or degraded due to agricultural and urban development, flood control, wood-cutting, livestock grazing, dropping groundwater levels, fire, invasion by non-native plants, etc.; although no data are available on potential impacts associated with off-highway vehicle traffic, pickup trucks have been observed driving through dense willow thickets along the Mojave River. Population trends: Populations in the eastern U.S. appear to be stable; western populations are declining; it appears that nesting numbers at Morongo Valley and Mojave River have recently remained stable but fluctuating; the most serious decline has been along the Colorado River.		

Major Information Sources: Stephen J. Myers, Tierra Madre Consultants, Inc., 1159 Iowa Ave., Suite D, Riverside, California 92507; BLM - Barstow and Ridgecrest Resource Area staff.

YUMA CLAPPER RAIL

Regional Summary of Yuma Clapper Rail

<table>
<tr><td>Fed: Endangered
State: Endangered</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Nesting</td><td>Foraging, Roosting</td></tr>
<tr><td>In the United States, mostly restricted to the Lower Colorado River and around the Salton Sea; Harper Dry Lake is the only suitable Yuma Clapper Rail habitat in the WMPA; marginally suitable habitat occurs at China Lake Naval Air Weapons Station and at Piute Ponds (Edwards Air Force Base), although it has not been reported from either place; does not presently occur in the WMPA and no historical populations are known from within its boundaries.</td><td>None. Nests in dense stands of cattail and bulrush along the Colorado River and in monoculture of cattail at the Salton Sea; breeds from March through July; partially migratory, wintering in brackish marshes along the Gulf of California; vegetation density is more important than the plant species, with some rails nesting in stands of Phragmites australis.</td><td>Foraging: Feeds primarily on crayfish along the Colorado River and similar crustaceans at the Salton Sea.
Roosting: Occupies freshwater marshes during the breeding season and brackish marshes during the winter.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence:(1, 2) BLM; (1, 2) San Bernardino County.</td></tr>
<tr><td colspan="3">WMPA Locations:(1) East Cronese Lake; (2) Harper Dry Lake.</td></tr>
<tr><td colspan="3">Committed Long-term Management:(1) Cronese Lakes ACEC; (2) Harper Dry Lake ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Nesting and foraging individuals: Coastal populations impacted by the non-native, Red Fox, although predation effects on the population are unknown; draining and alteration of freshwater marshes is probably the most serious threat, although specific information is lacking. Population trends: Hydroelectric dams along the Colorado River have increased marsh habitat, so that population numbers have increased along the Lower Colorado River; as of the early 1980’s, an estimated 750 individuals occur along the Lower Colorado River, north of Mexico.</td></tr>
</table>

Major Information Sources: Michael Patten, Department of Biology, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

CHAPTER V
REPTILES, AMPHIBIANS AND FISH

DESERT TORTOISE

The historic range of the desert tortoise covers approximately 7,197,100 acres of the planning area. Major topographical features used by tortoises are flats, valleys, alluvial fans, and rolling hills generally 1000-4000 feet in elevation. They typically avoid dry lake beds and steep slopes.

In the early 1970's biologists began to suspect that tortoise populations were declining through much of their range. In 1980, the USFWS listed the desert tortoise population on the Beaver Dam Slope in Utah as a federally threatened species. In 1989, due to new information on mortality rates, the tortoise was listed as a State threatened species and in 1990 it was listed as a federally threatened species.

In early 1990's, the USFWS commissioned eight scientists to develop a recovery plan for tortoise populations north and west of the Colorado River. The *Desert Tortoise (Mojave Population) Recovery Plan* (Recovery Plan) was completed in June 1994. The Recovery Plan identifies Desert Wildlife Management Areas (DWMAs) within which the conservation of viable populations of tortoises was deemed essential to the long-term recovery, viability, and genetic diversity of the species. The Recovery Plan recommends four DWMAs within the Western Mojave Recovery Unit (Recovery Unit), a region generally corresponding to the West Mojave planning area: Fremont-Kramer, Superior-Cronese Lakes, Ord-Rodman, and Joshua Tree National Park.

The Recovery Plan lists five recovery criteria for delisting of the tortoise within the planning area (Recovery Plan at 43.) The criteria are summarized as follows:

1. Upward or stationary population trend within a recovery unit for at least 25 years;
2. Enough habitat must be protected within a recovery unit, or the habitat and the desert tortoise populations must be managed intensively enough, to ensure long-term population viability;
3. A population lambda [discrete growth rate] of at least 1.0 in each DWMA;
4. Regulatory mechanisms and land management commitments are adequate and in place to ensure long-term habitat protection; and,
5. The population is unlikely to need FESA protection in the foreseeable future.

The Recovery Plan recommends the preparation of management plans for each DWMA to determine each DWMA's precise size, location, and boundaries (Id. at 46.) DWMAs should have what the Recovery Plan characterizes as "reserve level management," that is, "management necessary to remove threats to the desert tortoise" (Id. at 51.) Recommendations were presented for reducing levels of conflicting activities and addressing other issues within the DWMAs.

On February 8, 1994, the USFWS published a final rule in the Federal Register (59 FR 5820) designating critical habitat for the tortoise throughout its range in southwest Utah, southern California, southern Nevada, and northwestern Arizona. In the planning area, critical habitat designations generally correspond geographically to three of the four DWMAs (excluding most of Joshua Tree National Park). The critical habitat areas are: Fremont-Kramer (except for the southern 4/5 of the

Desert Tortoise Natural Area), Superior-Cronese, Ord-Rodman, and Pinto Mountain (which includes only 27 square miles along the northern boundary of the ± 1,250 square miles encompassing Joshua Tree National Park). There are approximately 1,739,000 acres of critical habitat in the WMPA. It should be noted that relatively large portions of non-habitat exist within these broad areas of critical habitat.

The Recovery Plan's DWMA's, BLM's Category I and II tortoise habitat and the USFWS' tortoise critical habitat include the same general areas. The BLM's Land Tenure Adjustment Project is intended to consolidate public land ownership within much of this area.

The approximate acreage of private, State of California and federally managed land that is within the range of the desert tortoise in the WMPA is depicted in Table 10 below.

Table 10 Land Ownership Within Tortoise Habitat

Land Ownership Within Tortoise Habitat	
Ownership	**Approximate Acres**
Total Private	**2,546,800**
State Land Commission	78,560
State Parks	25,390
Fish & Game	14,550
Total State	**118,500**
Military	1,803,740
Bureau of Indian Affairs	166
National Parks	198,930
BLM	2,528,950
Total Federal	**4,531,800**

Regional Summary of Desert Tortoise

Fed: Threatened **State**: Threatened	**Habitat Requirements in the WMPA**
General Occurrence Widely distributed throughout the Mojave and Sonoran deserts of California, Nevada, Utah, Arizona, Sonora, and Mexico; only the "Mojave population," located north and west of the Colorado River, is federally- and State-listed as threatened; mostly occur in four regions (Ord-Rodman, Superior-Cronese, Fremont-Kramer, and Joshua Tree) and outside these areas in generally lower densities; mostly found in creosote bush scrub with lower densities occurring in Joshua tree woodland and saltbush scrub; mostly in flats, valleys, bajadas, and rolling hills between 2,000 and 3,300 feet, occasionally above 4,100 feet; may avoid playas, plateaus, sand dunes, and steep slopes.	**Breeding**, **Foraging, Hibernation** Breeding: Adults may breed between 12 and 15 years of age; typically lay five to seven eggs in up to three clutches, depending on environmental conditions; most eggs are laid in the spring with a few occurring in the fall; individual males likely breed with several females. Foraging: Eat primarily annual plants, but also perennial plants such as cacti and grasses; occasionally, but rarely, observed eating caterpillars, lizards, and cow dung; generally prefer native forbs when available, although they will eat non-native plant species. Seasonal Activity: Within the WMPA, tortoises are mostly active between May and June with a second peak of activity during September and October; may be active during the summer and winter during periods of mild or rainy weather; generally spend up to 98% of their time in burrows or in "cover sites;" tortoises are known to have between 7 and 9 burrows per animal.
Jurisdictional Occurrence: Tortoises have been historically reported from all jurisdictions; no recent reports of wild tortoises in the Palmdale-Lancaster area or in Hesperia, although individuals are expected in peripheral areas where development is not as common; occur in relatively low numbers in urbanized portions of Victorville, Apple Valley, Adelanto, California City, Barstow, Twentynine Palms, Yucca Valley, Ridgecrest, and Indian Wells Valley; relatively more common in the undeveloped portions of the four counties and five military bases found in the WMPA.	
WMPA Locations: Throughout WMPA except western and northern edges.	
Committed Long-term Management: Ca. State Parks; JTNP; CDFG lands; BLM Compensation lands (6,430 acres), Category I, II: including DTNA, Rand Mountains-Fremont Valley Area [part of this area], Western Rand Mountains ACEC, Rainbow Basin, and Jawbone/Butterbredt ACEC (Category III).	
Threat Analysis: Threats are segregated into High, Medium, and Low categories: High: urbanization and development, disease, and construction; Medium: agriculture, fire, livestock grazing, military operations (tank maneuvers at Fort Irwin NTC and Twentynine Palms Marine Corps Air-Ground Combat Center), off-highway vehicles, predation, roads/highways/railroads, and utility corridors; Low: collecting, drought, energy and mineral development, garbage and litter, handling and manipulation, invasive weeds, noise, non-OHV recreation, vandalism, and wild horses and burros. Population trends: The Recovery Plan estimates that tortoises have declined at rates ranging from 3 to 59% per year; extirpated or occurring as isolated individuals in moderately to heavily developed areas throughout the WMPA.	
Management Policies: See below. The INRMP at Edwards AFB and current management at China Lake NAWS are compatible. New projects at all military bases are covered by Section 7 consultation.	

Major Information Source: William I. Boarman, U.S. Geological Survey, Canyon Crest Field Station, Department of Biology, University of California, Riverside. Riverside, California 92507; Ca. State Parks staff; CDFG staff; Joshua Tree National Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

Local Jurisdictions

Lancaster:
The City of Lancaster, in 1991, prepared a *Biological Assessment for Lancaster City and Planning: Relative Density Surveys for Desert Tortoises and Cumulative Human Impact Evaluation for Mohave Ground Squirrel Habitat* (Lancaster Biological Assessment). The report found that while the tortoise historically occurred in the Lancaster area "there is not a reproductively viable tortoise population in the areas surveyed" (Lancaster Biological Assessment at 22.) No evidence of living tortoises was found in that 225-square-mile planning area, nor have any been found during numerous focused surveys since 1991 (Brian Hawley, pers. comm.)

Ridgecrest:
The City of Ridgecrest is surrounded by BLM Category III Habitat, which is habitat not considered essential to maintaining viable tortoise populations. Except for six square miles located at the northeastern corner of the City within China Lake NAWS, all of Ridgecrest is found within the jurisdictional boundaries of Indian Wells Valley Water District; the following discussion is also pertinent to Ridgecrest.

Indian Wells Valley Water District:
Biological resource maps produced for IWVWD's General Plan show that tortoise sign has been found mostly in the southern and southwestern portions of their planning area. Recent surveys along Bowman Road found tortoise sign along that road only on the west side of Highway 395, although other surveys found tortoise sign on both sides of South China Lake Boulevard in the southern portions of their planning area, and in areas just north of Cerro Coso Junior College. Whereas tortoises have been eliminated from most developed areas within IWVWD's jurisdictional boundaries, it is likely that they will continue to be found in undeveloped areas to the south and west.

IWVWD provides training of field personnel in proper handling and treatment of desert tortoises found during maintenance of facilities. In addition, most of the land owned by the District located in tortoise habitat is fenced and closed to OHV activity and livestock grazing.

California Department of Parks And Recreation

Habitat of Desert Tortoise

The following two areas managed by CDPR have desert tortoise populations: Red Rock Canyon and Saddleback Butte State Park. Saddleback Butte State Park contains 2,000 acres of desert tortoise habitat. This habitat is in good functioning condition with some disturbed areas within the southwestern boundary. Studies have not been conducted to determine population densities and distribution. Red Rock Canyon contains two isolated tortoise populations: Red Cliffs Natural Preserve and Hagen Canyon Natural Preserve. These areas have been set aside for the preservation of both natural features and biological values and receive special management for the conservation of tortoise habitat. The habitat is in good functioning condition at both preserves; tortoise numbers are stable and the population is free of disease. Tortoises have been observed in the southwestern part of the park, but may have been affected by a significant flash flood in 1997. These small isolated pockets may serve an important role in future survival and recovery of the tortoise by maintaining a pool of disease free animals. There is marginally suitable habitat at the other two State Parks in the planning

area (Antelope Valley California Poppy Preserve and Ripley Desert Woodland) although no tortoises are currently found there.

California Department of Fish And Game

Habitat of Desert Tortoise

The following five areas managed by the CDFG have habitat for the desert tortoise: Fremont Valley Ecological Reserve, Hinkley Conservation Easement, Indian Wells Valley (proposed Ecological Reserve), King Clone Ecological Reserve and West Mojave Desert Ecological Reserve. The West Mojave Desert Ecological Reserve has tortoise densities, based on data collected in the late 1970's, that range from 50-100 tortoises/square mile in the western parcels to 20-50/square mile in the eastern parcels. Some parcels located between these two areas were estimated to have tortoise densities of 100-250/square mile. The extreme southeastern parcel lies in an area estimated to have 250+ tortoises per square mile. With the acceleration of mortality among tortoises due to disease and other factors since this data was collected, it is probable that these densities have declined in recent years. According to 1984 population density maps, Fremont Valley Ecological Reserve had densities of 100-250/square mile. See Appendix D for more detailed descriptions and location information for these areas.

Joshua Tree National Park

Habitat of Desert Tortoise

JTNP has 198,930 acres of tortoise habitat. Populations are patchy with an average density from 0 to 28 animals per square mile. The highest densities, over 200 per square mile, have been found at the Pinto Basin study plots. There are 2,729 acres with 30-58 animals/square mile and 12,493 acres with 8-29 animals/square mile. Much of the tortoise habitat is located within the wilderness areas which comprise 75 percent of JTNP. JTNP is split between the Western Mojave (300,000 acres) and Eastern Colorado (494,000 acres) Recovery Units. The juncture forms an important genetic bridge between these two recovery units.

When the USFWS listed the desert tortoise in 1990, "it was estimated that more than 50% of the park is desert tortoise habitat. The park's population is estimated at approximately 12,700 animals" (Karl 1988) (GMP at 145). There have been more recent surveys by park staff that have found that the tortoise is "more widespread and densities in some areas are higher than previously thought." (GMP at 145). More than 400 tortoises have been marked and recorded at the ten permanent trend plots and 630 km of transects studied by park staff.

In addition, the Recovery Plan identified approximately 17,600 acres of critical tortoise habitat that is in the WMPA within JTNP that consisted of: (1) sufficient space to support viable populations within the recovery area; (2) sufficient suitable surfaces for burrows, nests, and over-wintering; (3) sufficient vegetation for shelter from extreme temperatures and predators; and (4) habitat protection from disturbance by humans.

Policies Related to Desert Tortoise

The National Park Service surveys areas of tortoise habitat and monitors road mortality, especially in areas of high density. (GMP at 26)

FESA Compliance Related to Desert Tortoise

Compliance with FESA is currently done on a project-by-project basis. Park management has completed five FESA Section 7 consultations concerning the tortoise. Barker Dam loop road: the 1991 consultation required as mitigation a major desert tortoise survey from Quail Springs to the Geology Tour Road. The result of the survey showed very little desert tortoise sign in the area and failed to show any effect on tortoises from existing road use. The other consultations are: Fire Management Plan; Black Rock *prescribed fire*; and Covington Burn (6,000 acres). A powerline to the North Entrance went under consultation in 1994 (Biological Opinion 1-6-94-F-41). The power line was expected to impact 56 square feet of desert tortoise habitat. The park was to ensure that no desert tortoise burrows were impacted, trenches were checked for trapped tortoises, and construction took place during the tortoise inactivity period.

Bureau of Land Management

Habitat of Desert Tortoise

A total of 2,528,950 acres of BLM-managed lands within the planning area are tortoise habitat. Habitat is managed by the BLM according to categories (see below for explanation of categories). In 1994, the USFWS designated approximately 980,950 acres of BLM managed tortoise habitat as critical habitat (approximately 10% of the planning area).

Table 11 summarizes acres of habitat within each management category. The category designations only apply to BLM-managed lands.

Table 11 BLM Tortoise Management Categories

BLM Tortoise Management Category		
Category	**Acres**	**% of Planning Area**
Category I	599,600	>6
Category II	224,850	>2
Category III	895,500	>9

Policies Related to Desert Tortoise

1. *Desert Tortoise Habitat Management on the Public Lands: A Rangewide Plan - -*
In response to concerns about the status of tortoise populations and habitat on public lands, the BLM Director signed a policy for management of the tortoise and its habitat in November 1988. This policy, entitled *Desert Tortoise Habitat Management on the Public Lands: A Rangewide Plan* (Rangewide Plan)(BLM 1988), set forth a series of management objectives and policies to be

implemented on public lands throughout the range of the tortoise. This Rangewide Plan resulted in the establishment of a Management Oversight Group consisting of managers from BLM, USFWS, and state wildlife agencies within the range of the tortoise.

A basic element of the Rangewide Plan was that tortoise habitat on BLM-managed lands would be categorized according to four criteria: (1) importance of the habitat to maintaining viable populations, (2) ability to resolve conflicts, (3) tortoise density, and (4) population trend. Three categories were adopted based on the above four criteria.
The Rangewide Plan directed each BLM state organization to develop a strategy for implementing the policies in the Rangewide Plan based upon the tortoise habitat categories and an ecosystem approach. To the extent practicable, BLM's goal was to assure that there would be no net loss in quantity or quality of habitat in Category I and II areas.

2. *California Statewide Desert Tortoise Management Policy* - -
In response to the direction given in the Rangewide Plan, a *California Statewide Desert Tortoise Management Policy* (BLM 1992) was adopted by the BLM and other agencies in 1992. As directed by the Rangewide Plan, Category I, II and III habitat was identified throughout the CDCA. These three categories, incorporated into the CDCA Plan by amendment signed in 1993, superseded the original "crucial habitat" designation (*1989/90 California Desert Conservation Area Plan Amendments Decision Record* (signed April 1993), Amendment 19), include:

> **Category I** -- Essential to maintenance of large, viable populations.
> GOAL: Maintain stable, viable populations and increase populations where possible.
>
> **Category II** -- May be essential to maintenance of viable populations.
> GOAL: Maintain stable, viable populations.
>
> **Category III** -- Not essential to maintenance of viable populations.
> GOAL: Limit declines to the extent possible using mitigation measures.

The Policy set guidelines for BLM's management of tortoise habitat on public lands according to the three categories and initiated a number of programs to further the conservation of the desert tortoise, including education, research, habitat acquisition, law enforcement, and habitat restoration.

The Policy also sets forth a formula to be used in calculating the compensation required of project proponents who propose to disturb tortoise habitat on public lands. Moreover, for those projects requiring formal FESA Section 7 consultation with the USFWS and a biological opinion (such as plans of operation, leases, grants, and permits authorized by BLM), the Policy provides the bases for mitigation measures, which BLM requires as a condition of authorization (see Appendix A).

3. *California Desert Conservation Area Plan* - -
The CDCA Plan designated one ACEC within the planning area specifically for tortoise protection, the Desert Tortoise Research Natural Area (ACEC Number 22) (CDCA Plan, Map 17.)

Management of Land Uses in Relation to Long-term Conservation of Desert Tortoise

1. Commercial Harvest of Plant Products - -Harvesting of plant products is allowed in tortoise Categories I, II and III.

2. Public Roads - -The use of motorized vehicles in tortoise habitat Categories I and II is limited to public roads and to routes of travel as defined by the CDCA Plan. Rights-of-way across public lands may be granted for the construction and maintenance of city, county, and state streets and highways in tortoise Categories I, II and III subject to mitigation and compensation. See Appendix A for mitigation measures.

3. Recreation Activities - - General recreation activities, including non-motorized vehicle events, are permitted on BLM lands in tortoise Categories I, II and III. Recreational events requiring a permit may be subject to mitigation. See Appendix A for mitigation measures.

4. Non-competitive Motorized Vehicle Events - -A "Dual Sport Event," which is a non-speed, motorcycle event that occurs on paved and unpaved roads are an example of this sort of activity. Areas with high densities of desert tortoises may have seasonal restrictions (i.e. events can be held there in winter only.)

5. Utility Transmission - - Utilities within corridors are permitted in tortoise habitat Categories I, II and III subject to mitigation. See Appendix A for mitigation measures.

Table 12 Area Disturbed in Tortoise Habitat

Utility Construction 1990 - 1995	**Category I Acres**	**Category II Acres**	**Category III Acres**	**Total Acres**
Pipelines & Communication Cables	208	327	1,819	2,354
Power Production & Transmission	764	187	5,251	6,202

6. Electric Power Production - - Production of renewable sources of power generation (geothermal, wind and solar) is permitted on BLM lands in Categories I, II and III subject to mitigation and compensation.

7. Mineral Exploration and Development - - Mineral exploration and development is permitted in Categories I, II and III, except in areas withdrawn from mining that do not include a valid existing right. Withdrawn areas include the Desert Tortoise Natural Area and designated wilderness areas. New operations and the expansion of existing operations require the approval of a plan of operation or notice of intent subject to mitigation and compensation. Mining is allowed on lands acquired for compensation, unless later withdrawn from mineral entry.

Implementation -- A programmatic biological opinion has been approved for mineral exploration and development less than ten acres (Biological Opinion 1-6-92-F-28). Standard tortoise

mitigation measures apply in Categories I, II and III (see Appendix A). Operations larger than ten acres are allowed only after FESA Section 7 consultation with USFWS. The Service's biological opinion may include additional mitigation measures.

Current Activity -- The number of acres disturbed by mining operations since the tortoise was listed up to 1995 is shown in Table 13. A total of 946 acres of private land in selected tortoise habitat has been acquired as compensation for 1,012.9 acres of disturbed habitat caused by mining. Category I and II habitat accounted for only three percent of the total number of acres disturbed. The remaining 97 percent occurred in Category III.

Table 13 Mineral Activity Authorized -- 1989 to 1995

Activity	Compensation	Acres Disturbed by Mining			
		CAT I	CAT II	CAT III	TOTAL
Minerals (Plans/ Notices)					
Actions		44	8	96	148
Acres	828.5	15.5	3.8	867.8	887.1
Mineral Sales					
Actions		6	0	4	10
Acres	117.5	8.1	0	117.7	125.8
Mineral Leases					
Actions		0	0	0	0
Acres	0	0	0	0	0
TOTAL	946.0**	23.6	3.8	985.5	1012.9

** In addition to land acquisitions, a total of $37,967 was accepted as compensation.

8. Cattle/ Horse Grazing - - Cattle grazing is permitted in tortoise habitat Categories I, II and III subject to the CDCA Plan, approved Allotment Management Plans, mitigation measures for the tortoise listed in biological opinions and new grazing regulations that went into effect 2/13/95, which include fallback standards and guidelines for rangeland health.

Current Activity -- Current sheep and cattle authorizations on public land in tortoise Categories I, II and III are shown in Table 15. The utilization threshold for key perennial forage species grazed by cattle is 40% based on formal consultation with the USFWS. Since the listing of the desert tortoise, utilization levels in Category I, II, and III have for the most part complied with the 40% threshold. There have been some instances of moderate to heavy utilization in various allotments. There was moderate to heavy utilization levels documented in 1992 on the Harper Lake Allotment for an area which encompassed approximately 5% of that portion of the allotment in Category I. Moderate to heavy utilization levels have also been documented on the Ord Mountain Allotment on a yearly basis, on approximately 15% of that portion of the allotment in Category II. There was moderate to heavy utilization detected on the Rattlesnake Canyon Allotment in 1996, Rudnick Common Allotment in 1997 and Harper Lake Allotment in 1992, on approximately 5% of that portion of those allotments in Category III.

Table 14 Cattle Grazing Mitigation Measures

MITIGATION MEASURES LISTED IN CATTLE GRAZING BIOLOGICAL OPINION	CATEGORY I AND II (Allotments: Ord, Harper, Cronese, Pilot Knob)	CATEGORY III (Allotments: Cady, Hansen Common, Rattlesnake, Rudnick, Tunawee, Valley Well, Walker Pass)
1. Utilization of key perennial grasses shall not exceed 40% from 1/15 to 10/14 in tortoise habitat.	X	X
2. Perennial forage authorization above the preference level shall be made under temporary, non-renewable basis for one-month increments for 3/1 to 6/1 depending on availability of perennial forage. In Cat III, authorization may be for up to three months depending on number of head and forage condition.	X	X
3. All allotments to be managed in accordance with Allotment Management Plans (AMPs).	X	X
4. Manage for increase of native plants and promote continued improvement in trend and forage condition in areas where natural site potentials permit.	X	X
5. Range improvements shall be constructed and maintained in previously disturbed sites whenever possible. No tortoise burrows shall be destroyed and incidental take will be minimized. Waters will be turned off when cattle are not present.	X	X
6. Utilization of *key species* shall not exceed 30% in allotments in fair or poor range condition (Cronese Lake).	X	
7. Utilization of key species shall not exceed 40% in allotments with cattle distribution problems (Harper Lake).	X	
8. No new or replacement cattle waters (including hauling but not traversing pipelines) shall be constructed within 0.5 miles of Cat. I or II, unless overall benefit to tortoises.	X	X
9. No temporary, non-renewable use shall be authorized except in allotments in good range condition or better (including Cronese Lake).	X	X
10. Utilization of key species is limited to 40% for Cat. I and II, and limited to 40% during the growing season for allotments in Cat. III.	X	X
11. New key areas accessible to cattle and within 0.75 miles of water shall be established. Galleta grass shall be a key forage species in all key areas in which it occurs.	X	X
12. Cronese Lake allotment: a) Limit stocking rate to 500 AUMs on temporary, non-renewable use only; b) To reduce impacts in Category I, construct water development (BP2W) as planned.	X	
13. Harper Lake allotment: A two-pasture rotational grazing system shall be implemented to improve habitat in the north pasture. This will include a new water site in the north pasture.	X	
14. Ord Mountain allotment: New waters shall be developed in Cat. III habitat to discourage cattle use in the west end of the allotment.	X	

(Source: Cattle Grazing Biological Opinion, USFWS, July 13, 1993.)

Table 15 Livestock Allotments Within Tortoise Habitat

ALLOTMENT	Category I		Category II		Category III		Total	
	Acres	%	Acres	%	Acres	%	Acres	%
Sheep	-0-	0%	16,000	3%	562,500	97%	578,500	100%
Cattle	10,560	2%	102,530	24%	321,270	74%	434,960	100%

* Actual use reports are available for most allotments and most leasees.

9. Sheep Grazing - - Ephemeral sheep grazing has not been permitted in most of Category I and Category II habitat, beginning with the 1991 grazing season. From 1981-91, 350 pounds dry weight annual forage was required prior to turnout in Category I and II habitat. Sheep grazing is permitted in Category III habitat subject to guidelines set forth in the California Desert Plan and mitigation measures for the tortoise listed in the biological opinion. A large volume of production and species composition data exists for years with sufficient production for turnout as per biological opinions. This includes Tortoise and Burrow Study (TABS) data from the early 1990's and some post turnout monitoring related to maintaining a 200 lb/acre threshold.

Implementation -- In Category III habitat there must be 200 pounds of dry weight (annual) forage per acre before sheep may be turned out. Forage utilization above the 200 pound threshold cannot exceed 10 percent. In Category II there must be 350 pounds.

10. Wild Horses and Burros - -The Desert Tortoise Rangewide Plan sets forth guidance on policy. Objective 11 of that plan is to "provide for herd management for wild horses and burros which is consistent with the [tortoise] Category Goals, Objectives, and Management Actions of this Rangewide Plan. This may include limiting or precluding wild horse and/or burro use, as appropriate." The Rangewide Plan further directs management to take the following actions:

1. Management Action 11A. Continue to maintain appropriate management levels of wild horses and burros consistent with existing land-use plans and/or activity plans.

2. Management Action 11B. Ensure that appropriate monitoring of wild horse and burro herds occurs, and use such monitoring data to help develop management prescriptions for desert tortoise habitats.

3. Management Action 11C. Where site potential permits, manage grazing by wild horses and burros to increase native perennial grasses, forbs, and shrubs required by tortoises as food and cover.

4. Management Action 11D. Allow only those new range improvements for wild horses and burros in Category I and II Habitat Areas which will not create conflicts with tortoise populations. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to desert tortoise populations. Conflicting existing improvements should be eliminated as opportunities arise.

Table 16 Herd Management Areas For Burros And Horses in Tortoise Habitat

Herd Management Area	Totals	Category I	Category II	Category III	Military
Kramer					
Acres	13,800	6,900	0	0	6,900
Population					
Horses	0	0	0	0	0
Burros	0	0	0	0	0
Centennial					
Acres	209,370	0	0	9,970	199,400
Population					
Horses	168	0	0	0	168
Burros	0	0	0	0	0
Slate Range					
Acres	223,600	19,840	0	21,760	182,000
Population					
Horses	0	0	0	0	0
Burros	0	0	0	0	0

11. Wildland Fire Suppression - - Wildland fires on BLM lands in tortoise habitat are suppressed pursuant to BLM's 1996 Fire Management Activity Plan for High Desert Fire Management Zone Number 2. Resource Advisors are used on all fires exceeding 100 acres.

Implementation - - The following fire management suppression methods are applied in the planning area:

Category I and II Habitat -- Suppression may include a mix of the following: (1) aerial attack with fire retardants; (2) firebreaks built by crews using hand tools; and (3) mobile attack engines (i.e. fire trucks) using maintained roads and designated routes. Use of earth-moving equipment such as bulldozers is permitted in critical situations. After the fire, hand tools are used to restore firebreaks and to restore any closed vehicle routes which were used by fire crews.

Category III Habitat -- Suppression methods are the same as those permitted in Categories I and II, except mobile attack units may travel off-road to establish firebreaks along the perimeter of the fire. Any cross-county vehicle tracks are later obliterated by hand raking.

Table 17 Wildland Fire Experience on BLM Lands 1980 - 1995

Wildland Fires 1980 -1995	Desert Tortoise Categories			
	I	II	III	TOTAL
Number of Occurrences	89	32	727	848
Total Acres Burned	21,990	2,660	50,980	75,630
Average Number of Acres Burned	247	83	70	133

12. Refuse Disposal - - If a potential disposal site is within tortoise habitat, FESA Section 7 consultation with USFWS is required before BLM may transfer the land.

Implementation -- The transfer cannot occur if the land is encumbered by any mitigation measures or controls on use. On-going mitigation such as measures to reduce food source for ravens cannot be required as a condition of transfer. Accordingly, tortoise-proof fencing is installed, tortoises are removed from the area, and compensation is required prior to transfer.

Proactive Programs of Benefit to the Long-term Conservation of Desert Tortoise

1. Population Trend Monitoring - - Permanent trend plots provide population trend data including population density, size-specific sex ratios, size-specific age structure, morality rates, survivorship rates, and causes of mortality.

Implementation-- The BLM since 1979 and the Biological Resources Division of the United States Geological Survey since 1995 have monitored tortoise population trends in the West Mojave through studies on eight permanent study plots. Each study plot except for the DTNA Interpretive Center, covers about 640 acres. The DTNA Interpretative Center plot covers three square miles and requires 180 days of survey. Until recently, study plots were surveyed for 60 days (two 30-day passes) every fourth spring. Table 18 shows site locations, habitat category, and survey years.

Table 18 Desert Tortoise Monitoring Plot Locations

Plot Location	BLM Category	Years Surveyed
Fremont Valley	I	79,81,87,91
DTNA (Interior)	I	79,82,88,92,96
DTNA (Interpretive Center)	I	79,85,89,93,97
Fremont Peak	I	80,85,89,93
Kramer Hills	I	80,82,87,91,95
Stoddard Valley	II	79,81,87,91
Lucerne Valley	II	80,86,90,94
Johnson Valley	III	80,86,90,94

* Monitoring data has been incorporated as a part of the West Mojave Plan data base. Results are available upon request.

2. Research Projects - - Implement Objective 6 of the Desert Tortoise Rangewide Plan, which directs BLM to "conduct research and studies sufficient to develop and document the knowledge and techniques needed to ensure the viability of tortoise populations and habitats in perpetuity."

Implementation -- The Biological Resources Division of the United States Geological Survey, in cooperation with BLM, is conducting research on issues related to the ecology, conservation, and recovery of tortoise populations and their ecosystems. Current research includes the following: desert tortoise ecology; ecology of raven predation; cryptobiotic soil crusts; and effects of fire, livestock grazing, and off-highway vehicles on desert habitat.

3. Injured and Displaced Animals - - Reduce tortoise mortality by establishing and implementing procedures to be followed when an injured tortoise is brought to a BLM field office.

Implementation -- The public often notifies BLM Offices in Barstow and Ridgecrest upon finding an injured tortoise on a highway or road, or a tortoise which is wandering within an urban or developed area. Such tortoises are either brought to the BLM office by the public, or are picked up by BLM biologists or rangers. Injured and sick tortoises are given to tortoise and turtle clubs or other organizations approved by CDFG for adoption. Healthy-appearing, displaced animals are screened for external signs of disease and returned to or near the suspected source habitat using procedures established by the BLM, CDFG and USFWS.

4. Land Acquisition - - Acquire private lands within Category I habitat through purchase or exchange, or as compensation for habitat losses in Categories I, II and III.

Implementation -- Land acquisitions are made under the following projects or programs: the Land and Water Conservation Fund ("LWCF"); the Land Tenure Adjustment Project ("LTA") managed by Edwards Air Force Base and BLM; compensation for replacement habitat; and gifts. The Desert Tortoise Preserve Committee, with assistance from the Ridgecrest office of the BLM, has taken the lead role in obtaining private lands remaining within the DTNA, which is being managed by the two groups. A summary of private land acquisitions is presented by Table 19.

Table 19 Summary of Private Lands
Acquired in Tortoise Habitat by BLM

Source of Funding	**Acquisition of Private Lands (Acres)**	
	DTNA	**Category I**
Land and Water Conservation Fund	7,249	0
Land Tenure Adjustment Project	0	30,467
Compensation for Replacement habitat	0	6,430
Gifts and Other	0	97
TOTAL	7,249	37,994

(This table does not include acquisitions of private lands by CDFG or the Desert Tortoise Preserve Committee).

5. Fencing - - Perimeter fencing is intended to reduce human encroachment into tortoise habitat. Tortoise proof fencing is intended to keep animals away from roads and highways in order to reduce or eliminate road-kills, while encouraging the animals to cross through tortoise travel culverts.

Implementation -- Perimeter fencing exists at the following areas: (1) the DTNA (38 miles of fence surrounding Category I habitat); (2) the southern boundary of the Rand Mountain - Fremont Valley Plan area (14.5 miles of fence protecting Category I habitat); a Stoddard Valley fence (9.5 miles protecting Category III habitat); and a fence at El Mirage Dry Lake (8.8 miles protecting Category III habitat).

Tortoise-proof fencing has been installed along highways and roads; the mileage of roads which have been fenced is shown in Table 20.

Table 20 Tortoise Proof Fence

Placement of Fence	Current Highway Mileage
Highway 58	15
Highway 58 Extension	7
Ft. Irwin Road	3
Harper Lake Road (in final design stage)	6
Highway 14 (south of Red Rock Canyon)	20

6. Habitat Restoration - - Encourage reestablishment of native plants by reclaiming lands altered by mining and other earth disturbing activities, and by reclaiming routes of travel which have been closed to vehicle access.

Implementation -- Vehicle route reclamation has been initiated in the Fremont Valley and Rand Mountains area, and in Buckthorn Wash east of the Shadow Mountains. Reclamation has also been required as a condition of project approval for mining and other earth-disturbing activities. Significant route restoration has also occurred north of El Mirage Dry Lake.

7. Predator Control- - The reduction of raven and wild dog populations to control excessive predation of juvenile desert tortoises.

Implementation -- In 1988 and 1989, a pilot program was inaugurated to reduce common raven populations. The program was conducted at the Desert Tortoise Natural Area and at a landfill at the Marine Corps Air Ground Combat Center. A total of 24 and 280 ravens, respectively, were killed at the two sites. The program was interrupted by a temporary restraining order filed by the Humane Society of the United States. This led to a raven reduction agreement, and a new program under which only those ravens suspected of preying on juvenile tortoises would be shot. The program was conducted during the spring of 1993 and 1994; 46 ravens were killed. The effectiveness of shooting as a means of controlling predation, however, has yet to be determined.

Mitigation measures to reduce raven food sources have been imposed by permits authorizing major development actions. USFWS biological opinions issued for major transmission lines where the BLM was the federal lead agency have typically required measures to reduce raven nesting on transmission

towers. The BLM has no program to control feral dog predation. There are no domestic animal control units. There are leash laws for many of the ACECs. Mitigation may be included in project permits. Please see Appendix A.

8. Public Outreach- - Develop a public education program to promote compliance with FESA and CESA, and to reduce unnecessary tortoise mortality.

Implementation -- The following public information and education activities are underway:

- California Desert Information Center at Barstow.
- Multi-Agency Center at Lone Pine.
- Outdoor classroom events. Fifth grade classes from participating schools are briefed by BLM Ridgecrest Resource Area staff on tortoise conservation and protection. During 1995, there were 90 events attended by over 2700 students.
- Briefing materials for those engaged in activities authorized by BLM. For example, BLM biologists assist utility companies in developing tortoise education programs.
- Dissemination of educational information to all participants in authorized recreational activities in tortoise habitat.
- Educational materials including brochures.
- Kiosk at DTNA with information, and interpretive specialist each spring supported by the Desert Tortoise Preserve Committee.
- Ranger field contacts with the public.
- Annual outreach talks for the California National Guard, Army, and County Search and Rescue groups; Barstow Police Station and California Highway Patrol; and military bases (Fort Irwin, Marine Corps Logistics Base Barstow).

In addition to the above programs, there are several volunteer programs that benefit the desert tortoise. There are also tortoise crossing signs put up along roads (such as Fort Irwin Road).

9. Law Enforcement- - Section 303 of FLPMA grants BLM's ranger force the authority to enforce federal laws on public lands. BLM policy is to give higher priority to (1) patrols in accessible and higher density tortoise areas than elsewhere and (2) enforcement involving the tortoise and its habitat. Rangers are provided with habitat maps and profiles of poachers and collectors. BLM shares information with USFWS and CDFG enforcement officials. Violators of laws and regulations are aggressively prosecuted.

Implementation -- During 1995, 12 citations and 130 warnings related to the protection of the desert tortoise and habitat were issued by BLM Rangers. BLM ranger patrol hours in tortoise habitat during 1996 were as follows:

Category I Habitat	2,864 hours
Category II Habitat	3,245 hours
Category III Habitat	3,360 hours

CESA / FESA Compliance Related to Desert Tortoise

The development of programmatic biological opinions has greatly reduced the number of individual projects for which formal consultation is required. Because parameters are set and certain mitigation measures are already agreed upon for actions in tortoise habitat, all processing and environmental review is handled by the BLM. The BLM submits an annual report to USFWS with a list of all

involved projects. Where a species is listed by CDFG and USFWS (as with the tortoise), federal and state consultations or conferences take place concurrently.

MOJAVE FRINGE-TOED LIZARD

Regional Summary of Mojave Fringe-toed Lizard

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Endemic to California and a small area of Arizona, where it is restricted to aeolian sand, including both large and small sand dunes, margins of dry lake beds and washes, and isolated pockets against hillsides; generally found in creosote bush scrub between 300 and 3000 feet elevation; nearly all locations are associated with present and historic drainages and dune complexes of the Mojave and Amargosa Rivers.	Breeding season occurs between April and July, where females lay eggs in hummocks or sandy hills during the months of May through July; hatchlings appear in September; more young are produced after wet winters.	Foraging: Omnivorous, feeding on dried seeds, flowers, grasses, leaves, insects, and scorpions; it is likely that more plant material is consumed in the spring and more arthropods in the fall and winter; juveniles eat more arthropods than plants. Seasonal Activity: Active between March and October, with hibernation occurring between November and February; thermal voluntary maximum is 112.1°F, thermal voluntary minimum is 78.4°F, and thermal preference of 99.5°F.
Jurisdictional Occurrence: BLM, Los Angeles County; Ca. State Parks; San Bernardino Co.; Twentynine Palms.		
WMPA Locations: west slope of Alvord Mountains, Crucero, Daggett, Dale Dry Lake, El Mirage Dry Lake, Harper Dry Lake, Lenwood, Ludlow, Newberry Springs, Peck's Butte (Los Angeles County), Piute Butte (Los Angeles County), Yermo, Saddleback Butte State Park, Cronese Lakes ACEC, Pisgah Crater RNA, Razor Open Area (along the Mojave River Wash), near Manix, likely along all sandy portions of the Mojave River, and larger high flow washes and within the Desert Willow UPA between Afton Canyon & Basin Road..		
Committed Long-term Management: Harper Dry Lake ACEC; Cronese Lakes ACEC, Afton Canyon ACEC; Saddleback Butte State Park.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Direct disturbances may include habitat loss or damage by urban development, off-highway vehicles, and agriculture; indirect disturbances may include disruption of the sand source, wind transport, and sand corridors; buildings, railroad windbreaks, roads, etc. are types of human developments that adversely affect sand movement; predators include badgers, coyotes, hawks, shrikes, roadrunners, burrowing owls, leopard lizards, and various snakes. Population trends: No data on population status and relative density are available.		
Management Policies: BLM: Public Outreach: Educational presentations conducted by BLM, stress importance of not collecting lizards.		

Major Information Sources: Bradford D. Hollingsworth[1] and Kent R. Beaman[2], [1]Department of Natural Sciences, Loma Linda University, Loma Linda, California 92350, and [2]Section of Herpetology, Los Angeles County Museum of Natural History, 900 Exposition Blvd., Los Angeles, California 90007; California State Park staff; BLM - Barstow and Ridgecrest Resource Area staff.

MOHAVE TUI CHUB

Regional Summary of Mohave Tui Chub

Fed: Endangered **State**: Endangered	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Natural populations were historically restricted to the Mojave River; now found within a few manmade refugia; historically may have been most common downstream of Victorville.	At Lark Seep, chubs spawn between May and June (March or April with some fall occurrence elsewhere), with recruitment of young fish occurring in August; spawning appears to occur when temperatures are between 63° to 79°F; the adhesive eggs hatch in 6 to 8 days at temperatures of 64° to 68°F; small fish swim to the surface after about 12 hours and congregate in shallow areas; the presence of aquatic ditchgrass (*Ruppia maritima*) is important as it apparently provides preferred structure for egg attachment and provides thermal shelter.	Foraging: At various places the following food substances were found in the intestinal tracts: gyrinid larvae, chironomid larvae, organic debris, small tui chubs, vascular plants, *Spirogyra*, *Daphnia*, amphipods, trichopteran cases, detritus, cladocerans, copepods, etc. Habitat Suitability: The mean critical thermal maxima are reported at 92.3, 94.8, and 97.2°F; mean critical thermal minima were 37.0, 40.6, and 45.0°F; the thermal scope (between upper and lower lethal temperatures) is about 54°F; able to endure "hostile conditions" of 0.00013 ounces/gallon of dissolved oxygen, salinity of at least 11.55 parts per thousand, water conductivity of 18,000 micromhos/cm, and pH between 9 and 10; always associated with deep pools and slough-like areas of the Mojave River, and rarely found in streams without these features.
Jurisdictional Occurrence: China Lake NAWS; CDFG; BLM.		
WMPA Locations: Lark Seep (China Lake NAWS); Camp Cady WA; Desert Research Station near Hinkley (recently extirpated); BLM California Desert Information Center in Barstow (recently extirpated).		
Committed Long-term Management: Camp Cady WA.		
Threats Analysis: Breeding, foraging, hibernating, individuals: The species was virtually eliminated from natural areas by hybridization with Arroyo Chubs; changes in water quality of artificial ponds have resulted in die-offs of up to 90% at Soda Springs; most failures have been due to poor water quality and quantity, floods, and lack of suitable spawning areas. Population trends: The population established near Hinkley, which reached as many as 4,000 chubs, has since dried up and fish no longer occur there.		
Management Policies: BLM: Disposal of Federal Land: One population of Mohave Tui Chub existed at the Desert Research Station (Barstow Schools RPP lease from BLM) near Hinkley. Lack of maintenance of the pond pumps caused this population to expire. Habitat Restoration: Saltcedar control/riparian restoration is taking place in this species' native habitat and population reintroduction sites have been identified (Helendale, Harper Dry Lake, Afton Canyon). Two of these sites would be located within natural habitat areas. A Recovery Plan has been written. One of the Recovery Plan recommended actions is the establishment of five self-sustaining populations within the natural range for the species (a requirement for delisting).		

Major Information Sources: Jeff Lovich, United States Geological Survey, Department of Biology, University of California, Riverside, California 92521; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

PANAMINT ALLIGATOR LIZARD

Regional Summary of Panamint Alligator Lizard

Fed: None **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Endemic to California, known from only 16 occurrences in the Panamint Mountains, Nelson Mountains, Inyo Mountains, and White Mountains between 2,500 and 7,500 feet elevation; occurs most frequently in canyons supporting riparian habitat and nearby permanent springs; less abundant in xeric habitats associated with rocky alluvium and boulder talus slopes; riparian habitats dominated by red willow, arroyo willow, virgin's bower, wild grape, scarlet monkeyflower, and southern maidenhair fern; decaying willows, branches, and layers of leaves (over a foot thick) cover the riparian floor; riparian areas are generally bordered with boulder-strewn, talus slopes.	In captive animals; an adult female captured on 1 May 1959 had 12 eggs; mating of two individuals was observed from 15 to 17 May.	Seasonal Activity: Active from April through October; peak activity is in June with a decrease in activity during aestivation (July and August); although active during the day, they may also be active at night during the hot summer months. Foraging: Forages in thick brush and along talus slopes; eats small invertebrates.
Jurisdictional Occurrence: China Lake NAWS; BLM; CDFG.		
WMPA Locations: Suitable habitat in canyons in Argus Mountains.		
Committed Long-term Management: Great Falls Basin ACEC; Argus Wilderness; Indian Joe Spring ER.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Potential population declines may be attributed to loss of riparian habitat; other impacts likely include expanded mining operations, off-highway vehicle traffic, grazing (domestic and feral), and introduction of non-native, invasive plant species; over collecting may be a potential problem; proposed mining operations that modify springs, seeps, and stream flows would be a direct threat to the hydrology within the species' habitat. Population trends: No data on population status and relative density are available.		
Management Policies: BLM: Public Roads: Limited vehicular access available to three springs in Great Falls Basin ACEC (Austin, Mumford and North Ruth Springs). Congress, in the Desert Bill, provided for a road through the ACEC for the Selene Project, a ground-based laser used to recharge satellites. The laser would be located on China Lake NAWS but the road would cross BLM land. Vehicle-based Camping: Must be at least 200 yards from springs, seeps, and other sources of surface water. Wild Horses and Burros: Existing burro removal program both on BLM and NAWS lands that contain potential alligator lizard habitat. Over 2,000 feral burros removed from the Argus Range, small number remain. All the springs receive some impact to the soil and vegetation from the remaining burros. Residential, Commercial, Industrial: Blocks of private land with residences adjacent to potential habitat in Homewood Canyon. Water Diversion: The following springs have water diversions: Alpha Spring, North Ruth Spring, Bainter Spring and Indian Joe Canyon Spring. It is not known if lizards actually occur at these sites. Ecological Reserve Areas: Indian Joe Spring, (520 acres) acquired by CDFG in 1993. The 74,890 acre Argus Range Wilderness Area (only 1/3 of this is within the WMPA) is north of Homewood Canyon and provides restrictions on surface-disturbing activities which could affect habitat. Habitat Restoration: Upper Ruth Spring barricaded from OHV, plantings of willow.		

Major Information Sources: Clark R. Mahrdt[1] and Kent R. Beaman[2], Department of Herpetology, San Diego Natural History Museum, P.O. Box 1390, San Diego, California 92212, and [2]Section of Herpetology, Los Angeles County Museum of Natural History, 900 Exposition Blvd., Los Angeles, California 90007; BLM-Barstow and Ridgecrest Resource Area staff.

SAN DIEGO HORNED LIZARD

Regional Summary of San Diego Horned Lizard

<table>
<tr><td>Fed: None
State: Species of Special Concern</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence</td><td>Breeding</td><td>Foraging, Hibernation</td></tr>
<tr><td>The species is distributed along the western edge of the WMPA, from Antelope Valley to Joshua Tree National Park; they have been reported from sea level to 8,000 feet elevation; they are typically found in coastal sage scrub, chaparral, grassland, coniferous forests, oak woodland, riparian, and the margins of higher elevation desert where it is restricted to the juniper-desert chaparral community; within these areas, they prefer loose, fine soils, an abundance of open areas for basking, and plenty of native ants and other insects.</td><td>A clutch of 6 - 17 eggs is laid between May and early July, with eggs hatching in approximately two months, with young appearing in July and early August.</td><td>Foraging: Insectivorous, feeding primarily on native Harvester Ants, but will also feed on termites, beetles, flies, wasps, and grasshoppers. Seasonal Activity: Active from March to early October, with hibernation setting in as early as August; thermal voluntary maximum is 102.2°F, thermal voluntary minimum is 69.4°F, and thermal preference is 94.8°F.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Los Angeles County, JTNP, Palmdale; BLM; Ca. State Parks, San Bernardino County; Hesperia.</td></tr>
<tr><td colspan="3">WMPA Locations: Antelope Valley Poppy Preserve, JTNP, Los Angeles County, Mojave River, Oro Grande, Palmdale, San Bernardino Mountains, San Gabriel Mountains, Juniper Flats, Antelope Valley.</td></tr>
<tr><td colspan="3">Committed Long-term Management: JTNP, Antelope Valley Poppy Preserve, Juniper Flats ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Breeding, foraging, hibernating, individuals: Declines are attributed to collecting, habitat loss, off-highway vehicles, livestock grazing, increased predation by domestic dogs and cats, and the introduction of Argentine ants; habitat loss and collecting have been cited as the main reasons for the species' decline; predators include coyotes, badgers, foxes, kestrels, falcons, shrikes, roadrunners, burrowing owls, and various snakes. Population trends: No reliable data on population status and relative density are available; believed to be extirpated from 45% of its historical range, including desert regions near Palmdale, Los Angeles County, and the Mojave River.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Public Roads: The private land in the Antelope Valley, where this species occurs, has a well developed road network. Off-road vehicle use is thought to be a major factor in decline (Jennings 1987). There are ongoing problems with route proliferation in the Juniper Flats area. Mineral Exploration and Development: Limestone mines on north face of San Bernardino Mountains may impact this lizard. Cattle/ Horse Grazing: Livestock grazing is believed to be one of the primary causes for this species decline (Jennings 1987). The Rattlesnake Allotment occurs in this species habitat.</td></tr>
</table>

Major Information Sources: Bradford D. Hollingsworth[1] and Kent R. Beaman[2], [1]Department of Natural Sciences, Loma Linda University, Loma Linda, California 92350, and [2]Section of Herpetology, Los Angeles County Museum of Natural History, 900 Exposition Blvd., Los Angeles, California 90007; BLM- Barstow and Ridgecrest Resource Area staff.

SOUTHWESTERN POND TURTLE

Regional Summary of Southwestern Pond Turtle

Fed: FWS Species of Concern **State**: Species of Special Concern	**Habitat Requirements in the WMPA**	
General Occurrence	**Breeding**	**Foraging, Hibernation**
Scattered records occur along the Mojave River and elsewhere, including Yermo and Victorville; occupies a wide variety of wetland habitats including rivers and streams (both permanent and intermittent), lakes, ponds, reservoirs, permanent and ephemeral shallow wetlands, abandoned gravel pits, stock ponds, and sewage treatment lagoons; occurs in brackish estuarine waters at sea level up to 6,717 feet, but is uncommon above 5,015 feet.	Courtship and mating have been observed in the field during most of the year except December-January; nesting extends from late April through August (peak in late May to early July); nests are excavated during the morning or evening and are usually located along stream or pond margins; they are known to nest in open, grassy areas with a southern exposure, with one nest found 328 feet from the water.	Seasonal Activity: Activity varies geographically and turtles may be active in every month at some locations; they are known to move from several hundred feet up to three miles overland to adjacent water bodies. Foraging: algae, various plants, snails, crayfish, *Daphnia*, isopods, insects, fish eggs, frogs (tadpoles and adults), mallard duck carrion, and a mouse fragment; males consume more insects and vertebrates than do females, and females eat more algae. Habitat: emergent basking sites, emergent vegetation, and suitable refugia in undercut banks, submerged vegetation, mud, rocks, and logs; overwintering and aestivation sites typically located in upland areas and in southern California may be over 197 feet from water.
Jurisdictional Occurrence: BLM, CDFG, Victorville, and San Bernardino, Los Angeles and Kern Counties.		
WMPA Locations: Afton Canyon, Amargosa River, Camp Cady WA, Deep Creek, Elizabeth Lake, Mojave Narrows, Mojave River, Victorville, Yermo, Jawbone/Butterbredt ACEC, Kelso Creek.		
Committed Long-term Management: Afton Canyon ACEC, Jawbone/Butterbredt ACEC, Camp Cady WA.		
Threat Analysis: Breeding, foraging, hibernating, individuals: Habitat destruction the major cause of the species' decline; habitat eliminated by agricultural development, flood control and water diversion projects, and urbanization; fragmentation has resulted in a lack of genetic variability; Upper Respiratory Disease-like syndrome was responsible for deaths in Washington and could affect local populations; other threats include contaminant spills, grazing, pet collection, introduction of exotic plant species (salt cedar), introduction of non-native turtle species and bullfrog, and off-road vehicle use. Population trends: Populations are declining in southern California and over most of their northern range; today, only northern California and southern Oregon support extensive populations; 87 known localities in southern California in 1960 had declined to 57 by 1970; no more than 100 individuals are estimated for the Mojave River.		
Management Policies: BLM: Public Roads: A paved road runs along Kelso Creek with dirt roads exiting. Mineral Exploration and Development: Limited mining activity in Kelso Creek area. Cattle/ horse grazing: Cattle grazing allotments with potential habitat include the Hanson Common and Rudnick Common. It is BLM's goal to maintain a healthy rangeland through maintaining the riparian and upland vegetative community in a Proper Functioning Condition (PFC). Allotments monitored yearly and grazing adjusted if necessary to maintain levels of utilization of shrubs and grasses. Cattle generally grazed during winter and spring and removed during the summer when grazing would be most deleterious to riparian communities. Kelso Creek does have cattle grazing though most is private land. Fencing:A cattle riparian exclusion fence has been built at Afton Canyon ACEC. Habitat Restoration: Afton Canyon: BLM has initiated riparian restoration/saltcedar control. Tentative plans made to construct potholes, which may provide additional habitat for this species. USGS and BLM are conducting cooperative research on pond turtles at Afton Canyon.		

Major Information Sources: Jeff Lovich, United States Geological Survey, Department of Biology, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

CHAPTER VI
PLANTS

ALKALI MARIPOSA LILY

Regional Summary of Alkali Mariposa Lily

Fed: BLM Sensitive **State**: None **CNPS**: List 1B, R-2, E-2, D-2	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
In California, the species is scattered in Kern, northeastern Los Angeles, and southern and central San Bernardino Counties; also reported from two counties in Nevada (Clark and Nye).	Occurrence: There are five known areas within the WMPA where the plant occurs (see below); Bagley reported 165,000 in 67 areas on Edwards Air Force Base. Other Rare Species: None identified. *Eriastrum hooveri* may be present at Lancaster sites reported in 1998 by Steve Boyd, Rancho Santa Ana Botanic Garden.	Elevation: Occurs between 300 and 4,500 feet elevation. Habitat: Found in alkali meadows and playas, ephemeral washes, around vernally moist depressions, and at seeps within saltbush scrub. Associated Species: At Paradise Springs, found in low-growing saltgrass, Mexican rush, beak spike sedge, arrow grass, California blue eyed grass, alkali sacaton, and Emory's baccharis; associates at Edwards included wild rye, honey mesquit, alkali goldenbush, rabbitbrush , baltic rush, and winterfat; it is associated with saltbush at the Kern River Preserve.
Jurisdictional Occurrence: Lancaster, San Bernardino County, Kern County, Edwards AFB, California State Parks, Los Angeles County; BLM.		
WMPA Locations: Kern County; northeastern Los Angeles County; southern and central San Bernardino County; Paradise Spring;Cushenbury; Box S Springs; north of Barstow; Edwards AFB; north of Lancaster; Red Rock Canyon State Park; Lucerne Valley; Rabbit Springs (Lucerne Valley).		
Committed Long-term Management: Cronese Lakes ACEC (habitat), Red Rock Canyon State Park.		
Threat Analysis: Lowering of water tables threatens seasonally moist alkaline areas where the plant occurs; trampling by grazing is the next greatest threat; northward, urban expansion of Lancaster and Palmdale are a primary threat; competition with non-native species is a potential threat; low intensity horse grazing at Kern River did not apparently affect that population positively or negatively.		
Management Policies: The INRMP for Edwards AFB is compatible.		

Major Information Sources: Julie Greene, P. O. Box 1752, Corona, CA 91718; State Parks staff; BLM - Barstow and Ridgecrest Resource Area staff.

BARSTOW WOOLLY SUNFLOWER

Regional Summary of Barstow Woolly Sunflower

Fed: FWS Species of Concern; BLM Sensitive **State**: None **CNPS**: List1B, R-2, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Endemic to California, restricted to the western Mojave Desert, from Barstow in the east to Edwards Air Force Base to the west and north to Black Mountain north of Harper Lake.	Occurrence: two sites near Barstow, 15 sites between Barstow and Kramer Jct (San Bernardino County), one site north of Black Mtn, (Opal Mt.), one site west of Lane Mtn., and four sites on Edwards AFB (Kern County). Other Rare Species: Mojave spineflower a CNPS watch list species.	Elevation: Occurs between 2,500 to 3,6000 feet. Habitat: The species is limited to deflation basins, with a hard pan layer near the surface, cryptogamic crust, a low slope angle. High levels of boron have been documented in soils occupied by the Barstow wooly sunflower. The habitat varies from open spiny saltbush scrub in the south to creosote scrub/ Joshua tree woodland to the north. Associated Species: Spiny saltbush, goldfields, peppergrass, *Schismus barbatus*, pincushion flower, and Mojave spineflower at Edwards AFB. Creosote scrub, with scattered Joshua trees, desert peach, Mormon tea and needle grass at Lane Mtn.
Jurisdictional Occurrence: Edwards AFB, BLM, San Bernardino County, Barstow.		
WMPA Locations: Edwards AFB, from Kramer Junction east to Barstow and from the Kramer Hills north to Cuddeback Lake in San Bernardino County. An apparently isolated easternmost occurrence is located on Lane Mountain (Coolgardie Mesa); Barstow Woolly Sunflower ACEC (annual population density ranges from high to low dependent upon yearly precipitation rates); livestock exclosure at Kramer, east of the ACEC(extensive vegetation study was conducted ten years ago; the study was to establish baseline vegetation and monitor the long-term trend in relation to sheep grazing).		
Committed Long-term Management: Barstow Woolly Sunflower ACEC; Two livestock exclosures (one east of Barstow Woolly Sunflower ACEC and one within the ACEC that is 7 acres).		
Threat Analysis: Disturbance of soil crust (grazing, OHV use), increase of weedy annual plants.		
Management Policies: BLM: Barstow Woolly Sunflower ACEC Management Plan. See below. The INRMP for Edwards AFB is compatible.		

Major Information Source: Jim Andres, Granite Mountains Reserve, PO Box 101, Kelso, CA 9235; BLM, Barstow.

Bureau of Land Management

Management of Land Uses in Relation to Long-term Conservation of Barstow Woolly Sunflower

1. Utility Transmission: Approximately 50% of all known populations occur within active utility corridors. The Mead/McCullough-Victorville/Adelanto electrical transmission line was constructed with mitigation for this species. Seven of the 30 locations of this species found were indicated as potentially affected by construction of the transmission line. Mitigation for these seven locations included the following three items:

1) Populations that are located between tower sites will be avoided.

2) Populations in the vicinity of (but not on) tower sites and spur roads will be protected by staking and flagging.

3) Populations occurring on tower sites or on proposed access roads that cannot be avoided by implementation of (1) or (2) above will be avoided by road realignments and/or tower site realignments.

2. Electric Power Production: The Kramer Solar facility (installed by the LUZ solar partners) was required to transplant and create a specific habitat area with Barstow Woolly Sunflower. The experimental revegetation population is established and monitored by California Energy Commission.

3. Cattle/ Horse Grazing: Two allotments are within this species habitat: Harper Dry Lake and Pilot Knob Allotment (where there is no grazing currently).

4. Sheep Grazing: Sheep grazing and trampling poses the greatest threat to this species since grazing use coincides with flowering and seed production times (Bagley 1989). Gravel Hills, Stoddard Mtn. and Superior Valley sheep Allotments occur within this species' habitat, but sheep grazing has not been authorized in these allotments since 1992.

Proactive Programs of Benefit to the Long-term Conservation of Barstow Woolly Sunflower

1. Dedicated Ecological Reserve Areas - - Barstow Woolly Sunflower ACEC plus one square mile livestock exclosure east of the ACEC.

2. Population trend Monitoring - - ACEC monitoring last conducted in 1993 plus the vegetation study in the 1980's to establish baseline information at the livestock exclosure.

3. Land Acquisition - - Some desert tortoise compensation parcels that have been acquired contain habitat for this species.

4. Fencing - - Barstow Woolly Sunflower ACEC is partially fenced and all of the livestock exclosure is fenced.

CHARLOTTE'S PHACELIA

Regional Summary of Charlotte's Phacelia

Fed: BLM sensitive **State**: None **CNPS**: List 1B, R-1, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Primarily the east slope of the southern Sierra Nevada Mountains to the El Paso Mountains. Found west of the Sierra crest in the Lake Isabella watershed.	Occurrence:East Sierra Canyons, including Sand Canyon, Short Canyon, Nine-mile Canyon, and along the Los Angeles Aqueduct. Also in the El Paso Mountains within Red Rock Canyon State Park. Other Rare Species: Twisselman's poppy.	Elevation: 2000-7200 ft. Habitat: Pinyon pine woodland on steep, coarse sand and talus. Generally on granitic substrates, but occasionally on dark volcanic material and metamorphic rock. Grows on naturally disturbed sites, including washes. Associated Species: At higher elevations, pinyon pine and green ephedra. In Mojave desert scrub at lower elevations with creosote bush, beavertail cactus, and burrobush.
Jurisdictional Occurrence: BLM, Inyo Co., Kern Co., China Lake NAWS, Calif. State Parks.		
WMPA Locations: Red Rock Canyon State Park, east Sierra canyons, Volcano Peak.		
Committed Long-term Management: Red Rock Canyon State Park, Owens Peak Wilderness Sand Canyon ACEC, Short Canyon ACEC.		
Threat Analysis: May be threatened by grazing; collection and off-road vehicle travel are potential threats. Species is generally considered secure.		
Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Allotment. Habitat is isolated and rugged which limits access for livestock. See below. Current management at China Lakes NAWS is compatible.		

Major Information Source: Scott White, Scott White Biological Consulting, 99 East C St. #206, Upland, CA 91786

California Department of Parks And Recreation

Habitat of Charlotte's Phacelia

Red Rock Canyon Park has a population of nearly 1,000 plants and the sites are in excellent condition. Of 37 NDDB occurrence records, five are in this park.

Bureau of Land Management

Habitat of Charlotte's Phacelia

One population grows along the loose sand and gravel found in Short Canyon ACEC. Sand Canyon ACEC has two populations. In 1986, over 1,000 plants were found in the Sand Canyon ACEC. Several populations are within Owens Peak Wilderness. Of 37 NDDB occurrence records, 25 are on BLM land.

CRUCIFIXION THORN

Regional Summary of Crucifixion Thorn

Fed: None **State**: None **CNPS**: List, R-2, E-1, D-1	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Sonoran Desert and southern Mojave Desert; southwest Arizona and northern Sonora and Baja, Mexico.	Occurrence:Dale Dry Lake, Lavic, 25 mi. NE of Daggett, Hector Mine Road. Other Rare Species: sand linanthus.	Elevation: 350-2100 ft. Habitat: Along washes, non-saline playas, and drainages at the edge of basalt flows. Prefers fine-textured soils or dunes.
Jurisdictional Occurrence: BLM, San Bernardino Co.		
WMPA Locations: Hector Mine Road, Clark's Pass, 8 mi. W. of Ludlow.		
Committed Long-term Management: None		
Threat Analysis: Very few threats, OHV activity may destroy small plants.		
Management Policies: BLM: Cattle / Horse Grazing: The Cronese Lakes cattle allotment occurs within this species' habitat. A water development for cattle has been planned adjacent to this species' habitat within the ACEC (adjacent to UPA). Mineral Exploration / Development: There are three proposed mining operations in the vicinity of this species (Sleeping Beauty Wash Area and Lavic Wash Area).		

Major Information Sources: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

Bureau of Land Management

Habitat of Crucifixion Thorn

An Unusual Plant Assemblage (UPA) near Cronese Lakes, near Pisgah Crater, and Sleeping Beauty Wash provide habitat. Within the Cronese Lakes cattle allotment and a proposed water development there is likely to be impact to the species if the UPA is not fenced. The Sleeping Beauty Wash population, in the "Limited Use" land category, is large and found on the hillsides to the north. About half of the Sleeping Beauty population is in a Wilderness Study Area. The largest known concentration of Crucifixion Thorn in WMPA is on BLM lands near Pisgah Crater. The species occurs just outside the Pisgah Crater RNA. Lands around Pigsah Crater are "Moderate Use" and the BLM must coordinate with Caltrans and Santa Fe Railroad since the railroad runs through the center of the population. Numerous washes next to I-40 contain populations of this species.

CUSHENBURY BUCKWHEAT

Regional Summary of Cushenbury Buckwheat

Fed: Endangered **State**: None **CNPS**: List1B, R-3, E-3, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Endemic to California, restricted to the dry calcareous (primarily limestone) slopes of the northern San Bernardino Mountains; mostly occurs on the San Bernardino National Forest, south of the WMPA.	Occurrence: Restricted to scattered populations on the north slope of the San Bernardino Mountains; occurs in a narrow band from North Peak to just east of Cushenbury Canyon. Other Rare Species: Cushenbury milkvetch, Cushenbury oxytheca, and Parish's daisy.	Elevation: Occurs between 4,500 and 7,000 feet elevation. Habitat: Typically occurs on rocky slopes, often in cracks on bedrock of otherwise stable slopes, but is known from deeper soils derived from decomposed carbonates; not typically found in disturbed areas or along washes (as is Parish's daisy); appears intolerant of extensive shading, preferring full sunlight; occurs between shrubs rather than under them; locally common where found, but more commonly present as scattered individuals; occurs mostly in pinyon-juniper woodland but also Joshua tree woodland and mixed desert scrub. Associated Species: Single-needled pinyon, big-berry manzanita, curl-leaf mountain-mahogany, Shockley's rock cress, purple sage, yellow rabbitbrush, big sagebrush, pine needlegrass, canyon live-oak, Nevada forsellesia, green Mormon tea, blackbrush, Coville's dwarf abronia, yellow cryptantha, Utah juniper, and small-cupped buckwheat.
Jurisdictional Occurrence: BLM, San Bernardino County.		
WMPA Locations: Arctic Canyon; northeast of Monarch Flat; north of North Peak; Terrace Springs, Round Mountain. (A 25 mile span of the carbonate belt on the north slope of the San Bernardino Mountains is managed by the BLM. About one-half of the land is in "Moderate Use" and the other half is in "Limited Use.")		
Committed Long-term Management: San Bernardino County established a 43 acre biological preserve for several carbonate endemic plant species. The preserve shall exist in perpetuity and will be protected with signs and limited access.		
Threat Analysis: Appears to be more common on higher value limestone than on dolomites, making it particularly vulnerable to mining; clearly declined due to disturbance by mining; no populations are secure from mining activity; urbanization and off-highway vehicles are not considered threats; cattle grazing has never been a significant activity.		
Management Policies: BLM: Nearly the entire limestone formation where Cushenbury buckwheat is found is valuable for mining, although infrastructure costs are prohibitive east of Highway 18. More than 90% of the public lands have mining claims.		

Major Information Sources: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

CUSHENBURY MILKVETCH

Regional Summary of Cushenbury Milkvetch

Fed: Endangered **State**: None **CNPS**: List 1B, R-3, E-3, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrence in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Carbonate endemic occurring in the northeastern portions of the San Bernardino Mountains, extending northward into the Mojave Desert at elevations between 4,000 to 4,800 feet; mostly occurs on U.S. Forest Service lands and privately patented lands south of the WMPA.	Occurrence: Extends northward from the U.S. Forest Service lands into the WMPA, from Furnace Canyon (west) to Terrace Springs (east). Other Rare Species: Cushenbury buckwheat, Cushenbury oxytheca, and Parish's daisy.	Elevation: Mostly reported between 4,800 and 6,600 feet elevation; populations below 5,000 feet elevation are generally washed into the canyons from above. Habitat: Most commonly found in pinyon-juniper woodland with a few reports from Joshua tree woodland and blackbush scrub; mostly restricted to carbonate substrates (limestone and dolomite), occasionally found on granitic bedrock with an overlayer of carbonate soil. Associated Species: Associated with pinyon pine, juniper, joint-fir, paper-bag plant, Indian rice grass, yerba santa, blackbush, mountain mahogany, yuccas, manzanita, bear grass, flannel bush, Great Basin sagebrush, rabbitbrush, and needlegrass.
Jurisdictional Occurrence: BLM, San Bernardino County.		
WMPA Locations: northeast of Monarch Flat, Terrace Springs - Round Mountain. (A 25 mile span of the carbonate belt on the north slope of the San Bernardino Mountains is managed by the BLM. About one-half of the land is in "Moderate Use" and the other half is in "Limited Use.")		
Committed Long-term Management: San Bernardino County established a 43 acre biological preserve for several carbonate endemic plant species. The preserve shall exist in perpetuity and will be protected with signs and limited access.		
Threat Analysis: The population is estimated at between 5,000 and 10,000 plants, the number varying depending on rainfall; within the WMPA, most aggregations are downslope, on the northern edge of the species' range; 97% of known populations are threatened by mining and other activities; relatively less severe impacts include off-highway vehicle activity, trash dumping, recreational shooting, potential fire suppression impacts, and competition from exotic plant species; cement dust from adjacent mining activity forms a cement-like crust over soil surfaces and has eliminated some suitable and occupied habitat.		
Management Policies: BLM: Nearly the entire limestone formation where Cushenbury milk vetch is found is valuable for mining, although infrastructure costs are prohibitive east of Highway 18. More than 90% of the public lands have mining claims.		

Major Information Sources: Pamela MacKay, Department of Biology, Victor Valley College, 18422 Bear Valley Road, Victorville, California 92392; BLM - Barstow and Ridgecrest Resource Area staff.

CUSHENBURY OXYTHECA

Regional Summary of Cushenbury Oxytheca

Fed: Endangered **State**: None **CNPS**: List 1 B, R-3, E-3, D-3	**Habitat Requirements in the WMPA** Limestone substrates	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Cushenbury oxytheca is endemic to the carbonate north slopes of the San Bernardino Mountains	Occurrence: Cushenbury Canyon to Furnace Canyon Other Rare Species: Cushenbury buckwheat, Cushenbury milkvetch , and Parish's daisy.	Elevation: Occurs between 4,000 to 7,400 feet elevation. Habitat: Cushenbury oxytheca occurs on dry open slopes, mostly in loose scree and talus derived from carbonate rocks. Associated Species: Single-leaf pinion, juniper.
Jurisdictional Occurrence: BLM, San Bernardino County.		
WMPA Locations: Cushenbury Canyon to Furnace Canyon.		
Committed Long-term Management: San Bernardino County established a 43 acre biological preserve for several carbonate endemic plant species. The preserve shall exist in perpetuity and will be protected with signs and limited access.		
Threat Analysis: Mining has fragmented many of the higher elevation populations.		
Management Policies: BLM: Nearly the entire limestone formation where Cushenbury oxytheca is found is valuable for mining, although infrastructure costs are prohibitive east of Highway 18. More than 90% of the public lands have mining claims.		

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521-0124.

Bureau of Land Management

Habitat of Cushenbury Oxytheca

Two populations are known to exist on BLM managed lands near Monarch Flat. One population was 200 individuals and the other was about 3,000 individuals. A third population is two miles south of Monarch Flat.

DEDECKER'S CLOVER

Regional Summary of Dedecker's Clover

<table>
<tr><td>Fed: BLM Sensitive
State: None
CNPS: List 1 B, R-3, E-1, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Eastern crest of Sierra Nevada Mountains from Tulare and Inyo counties south to Spanish Needle in Kern County. Also in White Mountains of Mono and Inyo counties.</td><td>Occurrence:
East side of Spanish Needle in Owens Peak Wilderness.</td><td>Elevation: 7550 feet
Habitat: Dry rocky crevices, gravelly slopes, and canyon floors derived from granitic and metamorphic substrates.
Associated Species: Pinyon pine, Sierra juniper, Jefrey pine, sagebrush, linanthus, snowberry, gooseberry, Mormon tea.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: Only near top of Spanish Needle, Owens Peak Wilderness.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Owens Peak Wilderness</td></tr>
<tr><td colspan="3">Threat Analysis: Only potential threat is maintenance of Pacific Crest Trail.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Training of Pacific Crest trail maintenance crew.</td></tr>
</table>

Major Information Sources: Darran Banks, Herbarium Rancho Santa Ana Botanical Garden; Clarement, CA., 91711.

DESERT CYMOPTERUS

Regional Summary of Desert Cymopterus

Fed: FWS Species of Concern; BLM Sensitive **State**: None **CNPS**: List 1B, R-3, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Endemic to California, restricted to the western Mojave Desert on Edwards Air Force Base, BLM lands to the north and east of the base and surrounding private lands.	Occurrences: This species ranges from Apple Valley (historic) to the Cuddeback Lake basin (San Bernardino County), to the Rogers and Buckhorn lake basins on Edwards Air Force Base (Kern and Los Angeles Counties). Other Rare Species: Barstow Woolly Sunflower.	Elevation: Occurs between 2,060 and 3060 feet elevation. Habitat: Occurs in deep, loose, well drained, fine to coarse sandy soils of alluvial fans and basins; often in swales or stabilized low sand dune areas and occasionally on sandy slopes. It occurs in Mojave creosote bush scrub, desert saltbush scrub, and Joshua tree woodland. Associated Species: creosote bush, Joshua tree, saltbush, burro bush, goldenhead, winterfat, peachthorn, cheesebush, desert croton, and Indian rice-grass; the latter four are indicators of sandy habitats.
Jurisdictional Occurrence: Edwards AFB (97%), BLM (1%), County of San Bernardino(2%).		
WMPA Locations: Edwards AFB-Rogers Dry Lake basin; Kramer Hills; vicinity of the towns of Kramer and Boron; Harper Lake basin; Cuddeback Lake basin.		
Committed Long-term Management: None		
Threat Analysis: Potential threats from grazing, predation from native animals, and land development.		
Management Policies: BLM: Cattle/ Horse Grazing: Species' habitat is within the Pilot Knob Cattle Allotment and the Gravel Hills and Superior Valley Sheep Allotments where there is no current grazing (since 1992). The INRMP for Edwards AFB is compatible.		

Major Information Source: Mark Bagley, Consulting Botanist, P.O.Box 1431, Bishop, CA 93514.

Bureau of Land Management

Habitat of Desert Cymopterus

Black Mountain ACEC/Wilderness, Harper Lake cattle allotment, Kramer Hills, Barstow Woolly Sunflower ACEC and Superior Valley all provide habitat for this species.. Some populations need protection from cattle grazing (Superior Valley) despite being in BLM Wilderness Areas. One of the larger populations is thriving within 700 feet of what was a major livestock watering site in the Pilot Knob Allotment (currently no grazing there).

ERTTER'S MILKVETCH

Regional Summary of Ertter's Milkvetch

<table>
<tr><td>Fed: BLM Sensitive
State: None
CNPS: List 1B, R-3, E-1, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>A total of about 750 plants known from only three populations in the Walker Pass area of the southern Sierra Nevada Mountains. Unsurveyed, suitable habitat exists that may support unknown populations.</td><td>Occurrence: Only population within the WMPA consisting of about 50 individuals.</td><td>Elevation: Occurs on west-facing slopes between 5,600 and 6,200 feet elevation. Habitat: Restricted to openings within pinyon-juniper woodland and canyon live oaks on sandy-loamy to granitic soils. Associated Species: Associated plants include pinyon pine, canyon live oak, sulfur-flowered buckwheat, heliotrope, big sagebrush, and mountain pennyroyal.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: (1) BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: (1) Walker Pass area.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Owen's Peak Wilderness</td></tr>
<tr><td colspan="3">Threat Analysis: A total of about 700 of 750 plants occur in the Sequoia National Forest; on the forest, potential threats are considered minimal and include cattle grazing, trampling along the Pacific Crest Trail, scientific collecting; no threats are listed by the California Natural Diversity Data Base; given the small population size, it is susceptible to stochastic events; threats by urban development, mining, and off-highway vehicle traffic are considered marginal due to the ruggedness of the terrain.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Allotment, but habitat too isolated and rugged for livestock.</td></tr>
</table>

Major Information Source: Mark Elvin, 10711 Rives Ave., Downey, California 90241; BLM - Barstow and Ridgecrest Resource Area staff.

FOXTAIL CACTUS

Regional Summary of Foxtail Cactus

<table>
<tr><td>Fed: FWS Species of Concern; BLM Sensitive
State: None
CNPS: List 1B, R-2, E-2, D-2</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Widespread in the northern Colorado and southern Mojave Deserts from eastern Imperial Riverside and San Bernardino Counties and one site in Arizona.</td><td>Occurrence: Bullion Mountains (Twentynine Palms Marine Corps Air-Ground Combat Center), Sheep Hole Mountains, and the northern portion of Joshua Tree National Park.</td><td>Elevation: Occurs between 250 and 5,000 feet in elevation.
Habitat: Rocky, mostly granitic, hot, dry slopes and occasional on alluvial slopes
Associated Species: creosote bush, burro bush, and Joshua tree.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Twentynine Palms Marine Corps Air-Ground Combat Center, JTNP, San Bernardino County; BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: Twentynine Palms Marine Corps Air-Ground Combat Center, JTNP; near the Hesperia Landfill (scheduled for expansion shortly) and near the Dale Mining District, just north of Joshua Tree National Park.</td></tr>
<tr><td colspan="3">Committed Long-term Management: JTNP.</td></tr>
<tr><td colspan="3">Threat Analysis: No significant threats are known to exist.</td></tr>
<tr><td colspan="3">Management Policies: The INRMP for Twentynine Palms Marine Corps Air-Ground Combat Center is compatible.</td></tr>
</table>

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

HALL'S DAISY

Regional Summary of Hall's Daisy

Fed: BLM Sensitive **State**: None **CNPS**: List 1B, R-3, E-1, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrence in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Known from less than 20 sites in the southern Sierra Nevada Mountains; most populations occur on National Forest or National Park Service lands; known from only Fresno, Tulare, and Kern Counties.	Occurrence: Only a single population occurs in the WMPA: on the northeastern slope of Owens Peak, Kern County. Other Rare Species: Sweet-smelling monardella, Nine-mile Canyon phacelia, Muir's raillardella, and Owens Peak lomatium.	Elevation: Occurs between 4,600 and 8,000 feet elevation. Habitat: Occurs on dry, rocky ledges and vertical outcrops derived from granitic substrates; vegetation communities in which it occurs include broadleafed upland forest, upper and lower montane coniferous forests, and pinyon-juniper woodland. Associated Species: Associated with Jeffrey pine, limber pine, singleleaf pinyon, sugar pine, white fir, and Sierra juniper.
Jurisdictional Occurrence: (1) BLM.		
WMPA Locations: (1) Owens Peak Wilderness.		
Committed Long-term Management: (1) Owens Peak Wilderness.		
Threat Analysis: Its wide range, occurrence on federal lands (primarily Wilderness), and relative inaccessibility contribute to a low threat to the species; outside Wilderness, plants may be threatened by logging, grazing, trail expansion, and fire control activities.		
Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Cattle Allotment, but habitat too isolated and rugged for livestock; Trail Maintenance: training of Pacific Crest Trail maintenance crew.		

Major Information Sources: Darin L. Banks, Curatorial Assistant, Herbarium, Rancho Santa Ana Botanic Garden, 1500 N. College Ave., Claremont, California 91711; BLM - Barstow and Ridgecrest Resource Area staff.

INYO HULSEA

Regional Summary of Inyo Hulsea

Fed: BLM Sensitive **State**: None **CNPS**: List 2, R-2, E-2, D-1	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Inyo hulsea is known from the Inyo, Coso, and Panamint Mountains, Inyo County. Mono County collections are believed to be erroneous determinations. Reported locations in Nevada are from the North and central Belted Ranges to the Eleanor Range.	Occurrence: Known locations are inaccessible and poorly collected (few roads and administrative prohibitions against collection, e.g. China Lake NAWS, Death Valley National Park). The Coso Mountains location is based on a 1893 collection and the plant is likely to occur in the mountains of the northernmost part of the WMPA within the China Lake NAWS.	Elevation: Occurs between 4,600 and 7,300 feet in elevation. Habitat: This species is found on steep, unstable, sandy or rocky slopes and sometimes in washes in high desert shrublands and pinyon woodlands. Associated Species: Big sagebrush, saltbush, rabbitbrush, single-needle pinion, and antelope brush.
Jurisdictional Occurrence: China Lake NAWS.		
WMPA Locations: Coso Mountains		
Committed Long-term Management: None.		
Threat Analysis: No known threats within the WMPA.		
Management Policies: Current management at China Lakes NAWS is compatible.		

Major Information Source: Scott D. White, Scott White Biological Consulting, 99 East C St., No. 206, Upland, CA 91786

KELSO CREEK MONKEYFLOWER

Regional Summary of Kelso Creek Monkeyflower

<table>
<tr><td>Fed: FWS candidate for Threatened or Endangered
State: None
CNPS: List 1B, R-3, E-2, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Restricted to the southern Sierra Nevada within the Kern River drainage in the Lake Isabella area, within an area five miles in diameter, except for one occurrence in Cyrus Canyon, 13.5 miles northwest of the other populations.</td><td>Occurrence: Nine of 10 known occurrences are within the WMPA, wholly or partially on lands administered by the Bureau of Land Management; two of the BLM populations consist of thousands of plants, two consist of hundreds of plants, and one has an undetermined number of plants.</td><td>Elevation: Occurs between 2,800 and 4,300 feet elevation. Habitat: Occurs in loamy, coarse sands of alluvial fans, dry streamlets, and deposits of granitic origin that are found in Joshua tree woodlands, pinyon-juniper woodlands, or their transition in the southern Sierra Nevada in the Kelso Creek drainage within the Kern River drainage; one disjunct population occurs in finer soils developed from meta-sedimentary rocks. Associated Species: Associated with pygmy poppy, silver cholla, purple sage, golden gilia, Tehachapi monkeyflower, Fremont’s monkeyflower, and cheesebush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM, Kern County.</td></tr>
<tr><td colspan="3">WMPA Locations: Cyrus Canyon, Kelso Creek near Cortez Canyon, Jawbone/Butterbredt ACEC.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Jawbone/Butterbredt ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Species has probably always been rare with a very narrow distribution; mobile home and subdivision developments either presently threaten or have already impacted seven of the ten occurrences; highway and road maintenance are a threat; at least one population has been bisected by one of these roads; off-highway vehicle use threatens five of the ten occurrences; cattle grazing affects four of the sites; water development and impoundment are potential threats; the small distribution puts the plant at risk of extinction from stochastic events; five of the 10 known populations occur on private lands with no planned protection; the creation of Lake Isabella caused the possible extirpation of at least one occurrence.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle/ Horse Grazing: Area is within the Rudnick Common Allotment where grazing is conducted under an AMP which includes seasons of use, limits on utilization and a rotational grazing system.</td></tr>
</table>

Major Information Sources: Mark Elvin, 10711 Rives Ave., Downey, California 90241; BLM - Barstow and Ridgecrest Resource Area staff.

KERN BUCKWHEAT

Regional Summary of Kern Buckwheat

Fed: BLM Sensitive **State**: None **CNPS**: List 1B, R-3, E-3, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrence in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
All records are from Kern County, mostly inside the WMPA, one of these occurrences have been eliminated.	Occurrence: Approximately 400 plants occur west of Middle Knob south of Pine Tree Canyon, and on Sweet Ridge north of Pine Tree Canyon. Two of the Four populations in the WMPA are on public lands. One reported occurrence on private lands outside the WMPA, north of Highway 58, was eliminated by wind energy development. It is possible the population north of Highway 58 was misidentified.	Elevation: Most populations occur around 6,000 feet elevation, with a few occurrences down to 4,900 feet elevation. Habitat: Generally found on clay soils in openings of pinyon-juniper woodlands; many of the populations occur on what appear to be old ephemeral lakes in shallow, poor-draining depressions between low knolls, in stony, deep clay loam soils. Flowers are present May through June, fruit ripens and is dispersed in about July, but the vegetative portions of the plant are detectable throughout the year. Associated Species: Associated with Jeffrey pine, single-leaf pinyon, Tidy-tips, Monkey flower, Stonecrop, and wild onion.
Jurisdictional Occurrence: BLM, Kern County.		
Specific WMPA Locations Cited: Middle Knob; Cache Peak; Sweet Ridge;		
Committed Long-term Management: None.		
Threat Analysis: Threatened by construction and maintenance of wind energy facilities; where present, camping, OHVs and cattle grazing are potential threats.		
Management Policies: BLM: Electric Power Production: Case-by-case basis with site surveys. No wind energy development allowed in habitat area. Cattle/ Horse Grazing: Area is within the Hansen Common Cattle Allotment. Habitat is isolated and cattle do not access the area.		

Major Information Sources: Julie Greene, P. O. Box 1752, Corona, CA 91718 and Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

LANE MOUNTAIN MILKVETCH

Regional Summary of Lane Mountain Milkvetch

<table>
<tr><td>Fed: Endangered
State: None
CNPS: List1B, R-3, E-3, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Lane Mountain milkvetch is a narrow endemic species found from the south end of Fort Irwin and west of Lane Mountain.</td><td><u>Occurrence:</u> There are two known occurrences within the WMPA where the plant occurs. The largest is to the north and northwest of the Paradise Range northeast of Lane Mountain (partially on Fort Irwin), the smaller site is on the Coolgardie Mesa west of Lane Mountain. Only about 200 plants have ever been reported.</td><td><u>Elevation</u>: Occurs between 3,150 to 3,850 feet in elevation.
<u>Habitat</u>: This species occurs in soils derived from granite in Mojave scrub with a few widely scattered Joshua trees.
<u>Associated Species</u>: burro bush, California buckwheat, Nevada Mormon tea, Cooper goldenbush, turpentine-broom, paper-bag bush, Mojave aster, hop sage, Anderson box-thorn, and creosote bush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Fort Irwin NTC (68%), Bureau of Land Management (31%), San Bernardino County (private land, 1%).</td></tr>
<tr><td colspan="3">WMPA Locations: Coolgardie Mesa, Paradise Range, Fort Irwin NTC.</td></tr>
<tr><td colspan="3">Committed Long-term Management: None.</td></tr>
<tr><td colspan="3">Threat Analysis: Given the small population size, it is susceptible to extinction from stochastic events, potential mineral claims on BLM lands and potential Fort Irwin NTC expansion.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Mineral Exploration and Development: Club mining activities, gold exploration and decorative stone removal (halted due to noncompliance) proposals are evaluated to ensure no loss of this species' occupied habitat. Current management at Fort Irwin NTC is compatible.</td></tr>
</table>

<u>Major Information Source</u>: Mark Bagley, Consulting Botanist, P.O.Box 1431, Bishop, CA 93514

Bureau of Land Management

Habitat of Lane Mountain Milkvetch

Public lands within a 15 mile radius around Lane Mountain, primarily between Ft. Irwin and Coolgardie Mesa are habitat for this species. Around 100-150 individuals were found within this area.

LITTLE SAN BERNARDINO MOUNTAINS GILIA

Regional Summary of Little San Bernardino Mountains Gilia

Fed: FWS Species of Concern; BLM Sensitive **State**: None **CNPS**: List1B, R-3, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Endemic to Southern California and is restricted to dry canyons and alluvial fans in the Little San Bernardino Mountains; populations in Palm Springs, Whitewater Canyon, and elsewhere around the head of the Coachella Valley are not within the WMPA.	Occurrence: The most extensive populations of this species are along washes at the northern edge of Joshua Tree National Park in the Little San Bernardino Mountains in the WMPA. These populations are near Yucca Valley, Joshua Tree and Twentynine Palms. A small population occurs in Rattlesnake Canyon on the east end of the San Bernardino Mountains.	Elevation: Occurs between 250 feet (Palm Springs) and 4,000 feet (Joshua Tree National Park). Habitat: Open, loose, sandy flats with few or no competing species and not in the influence of larger shrubs. Populations are found on sandy benches along the margins of washes or in loose blowsands away from washes. Associated Species: Nearby shrub species include: creosote bush, brittle bush, burro bush, cheesebush, and desert catalpa. Associated annuals include: sigmoid thread plant, blushing thread plant, evening-primrose, common loeflingia, Arizona nest-straw and Wallace's woolly sunflower.
Jurisdictional Occurrence: San Bernardino County, BLM, JTNP.		
WMPA Locations: Big Morongo Canyon, JTNP, Rattlesnake Canyon, south of the community of Joshua Tree.		
Committed Long-term Management: JTNP, Big Morongo Canyon.		
Threat Analysis: Land development, OHV use.		

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

Joshua Tree National Park

Habitat of Little San Bernardino Mountains Gilia

The north part of JTNP provides habitat for this species. Populations in these areas were approximately 100 plants in 1986, 150-200 in 1988, and 25-30 in 1990, and 1,000 plants in 1993 (Rarefind 1996). These populations are found in Quail and Panorama Heights washes. New populations were discovered in 1995 in the wash system west of Squaw Tank from Geology Tour Road and southeast of the trailhead at Stirrup Tank. Informal surveys conducted in spring of 1996 found one desiccated individual in the Stirrup Tank area; surveys of Upper Wilson Canyon and Squaw Tank washes found zero individuals.

MOJAVE MONKEYFLOWER

Regional Summary of Mojave Monkeyflower

Fed: BLM Sensitive **State**: None **CNPS**: List 1B, R-2, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrence in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
The entire range of this species is within the WMPA; it has never been reported west of the Mojave River.	Occurrence: Although 25 to 30 small aggregations are reported between I-15 and the Mojave River, the largest populations occur along Camp Rock Road, south of Daggett, where at least four populations contained more than 1,000 plants.	Elevation: between 2,000 and 3,300 feet. Habitat: Primarily on granitic soils, gravelly banks of desert washes, occasionally in flat areas with cobble and course sand; also in sandy openings between creosote bushes and along rocky slopes; Joshua tree woodland and creosote bush scrub. Associated Species: creosote bush, desert senna, cheesebush, ratany, cholla, burro bush, indigo bush, cat-claw acacia, Bigelow's monkeyflower, Canterbury bells, and desert trumpet.
Jurisdictional Occurrence: BLM, San Bernardino County, CDFG.		
WMPA Locations: South of Barstow and Daggett, along Camp Rock Road; Calico Ghost Town; Kane Springs in Newberry Mountains; numerous small populations (25 to 30 occurrences) between the Mojave River and I-15 in the vicinity of Helendale to Oro Grande, between Victorville and Barstow; Old Woman Spring, east of Lucerne Valley (not seen since 1936), Azucar Mine (one mile east of Camp Rock Road), along powerline road just south of Daggett off Camp Rock Road, and old Daggett Dump washes.		
Committed Long-term Management: Newberry Mountains Wilderness; King Clone ER.		
Threat Analysis: Mine and home sites between the Mojave River and I-15 have likely eliminated some plants; disposal of public land associated with the LTA Program; off-highway vehicles pose a considerable threat to the species south of Barstow and Daggett; cattle trample plants but it is not known if they eat them; current mining probably does not pose much of a threat.		
Management Policies: BLM: Mineral Exploration and Development: About 15% of known populations are located in high and medium potential mineral areas. A few known habitats near Camp Rock Road have been impacted by trespass mining. Cattle/Horse Grazing: Ord Mountain Allotment. Trampling by cattle is a minor impact, except perhaps at Kane Spring.		

Major Information Sources: Pamela MacKay, Department of Biology, Victor Valley College, 18422 Bear Valley Road, Victorville, California 92392; CDFG staff; BLM - Barstow and Ridgecrest Resource Area staff.

Bureau of Land Management

Habitat of Mojave Monkeyflower

Camp Rock Road southeast of Barstow, Helendale area, Highway 247 south of Barstow and north of Barstow Cemetery east of Irwin Road provide habitat for this species. Populations near Camp Rock Road, Helendale and Highway 247 are in the "Moderate Use" land classification. It has also been seen in Kane Wash which is in a "Limited Use" land classification. Of the approximately 20 historical occurrences, many are presumed extirpated.

MOJAVE TARPLANT

Regional Summary of Mojave Tarplant

Fed: FWS Species of Concern **State**: Endangered **CNPS**: List 1B, R-3, E-3, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
The Mojave tarplant distribution is highly discontinuous from the Peninsular Ranges in Riverside and San Diego counties, the desert slope of San Bernardino Mountains, and the desert slopes of the Southern Sierra Nevada	Occurrence: Only two sites are known within the WMPA. The type locality at the confluence of the Mojave River and Deep Creek is known from only two collections made in 1933. The Cross Mountain/Jawbone Canyon (Kern County) location was recently disclosed from a collection that was misidentified as *Hemizonia arida* in 1977. More recently a population was discovered at Short Canyon just north of Walker Pass. More field work will probably provide additional distribution information.	Elevation: 2,800 - 5,250 feet Habitat: Clay or silty soils that are saturated in winter and spring. Desert edge chaparral and arid coastal mountains. At Short Canyon it occurs in moist soil in a broad swale just above the upper elevational limit of the Joshua Tree (*Yucca brevifolia*). Associated Species: At Short Canyon; desert almond, cliff rose, and salt grass.
Jurisdictional Occurrence: BLM; San Bernardino National Forest, U.S Corps of Engineers.		
WMPA Locations: Cross Mountain (Jawbone Canyon), Short Canyon, Mojave River Forks Dam.		
Committed Long-term Management: Short Canyon ACEC.		
Threat Analysis: Extirpated at type locality near Mojave Forks dam. Potential development and water diversion projects.		

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

MUIR'S RAILLARDELLA

Regional Summary of Muir's Raillardella

<table>
<tr><td>Fed: BLM Sensitive
State: None
CNPS: List 1B, R-2, E-1, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>California endemic known from approximately 19 occurrences from the southern Sierra Nevada Mountains in Fresno, Tulare, and Kern Counties with one disjunct population in Monterey County; species is mostly restricted to the drainages of the Kings and Kaweah Rivers in the Sequoia and Sierra National Forest and Kings Canyon National Park.</td><td>Occurrence: The one WMPA population occurs in the Owens Peak Wilderness Area on the northeastern slope of Owens Peak at approximately 8,000 feet elevation
Other Rare Species: Sweet-smelling monardella, Nine-mile Canyon phacelia, Hall's daisy, and Owens Peak lomatium.</td><td>Elevation: Occurs between 3,200 and 8,000 feet elevation. Habitat: Occurs on semi-barren granitic outcrops or soils derived from granitic substrates in openings of lower and upper montane forests and chaparral; species has no mineralogical requirement for granitic soils as it is successfully cultivated in non-granitic mixes. Associated Species: Associated with Jeffrey pine, limber pine, singleleaf pinyon, sugar pine, white fir, and Sierra juniper.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: Owens Peak.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Owens Peak Wilderness.</td></tr>
<tr><td colspan="3">Threat Analysis: Relatively low-risk species for extirpation due to relatively wide distribution, many populations occur on National Forests and National Park lands, and habitats consist of rugged, isolated localities; populations not occurring in Wilderness Areas may be threatened by logging, grazing, and maintenance activities; potential trampling by visitors, although this threat is not considered significant; the closure of nearby forest canopies due to fire suppression and the corresponding accumulation of leaf litter may lead to mortality if plants are buried in litter.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Cattle Allotment (habitat too isolated and rugged for livestock).</td></tr>
</table>

Major Information Sources: Darin L. Banks, Curatorial Assistant, Herbarium, Rancho Santa Ana Botanic Garden, 1500 N. College Ave., Claremont, California 91711; BLM - Barstow and Ridgecrest Resource Area staff.

NINE-MILE CANYON PHACELIA

Regional Summary of Nine-mile Canyon Phacelia

Fed: FWS Species of Concern; BLM Sensitive **State**: None **CNPS**: List 1, R-3, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Along the Sierra Crest draining away from Owens Peak into Tulare and Inyo Counties	Occurrence: East facing canyons of the Sierra crest in the vicinity of Owens Peak, Inyo County, between Ninemile Canyon and Indian Wells Canyon.Other Rare Species: Sweet-smelling monardella, Hall's Daisy, Muir's Raillardella.	Elevation: Occurs between 5,400 and 8,200 feet. Habitat: In the dripline of canyon oak and pinyon pine, in sandy, gravelly soils. Associated Species: canyon oak and pinion pine.
Jurisdictional Occurrence: Inyo Co., BLM.		
WMPA Locations: Indian Wells Cyn., Ninemile Cyn.,		
Committed Long-term Management: Owens Peak Wilderness, Sand Canyon ACEC.		
Threat Analysis: Intensive grazing and trampling.		
Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Cattle Allotment, but habitat is isolated and rugged which may preclude livestock use from most of the populations.		

Major Information Source: Scott White, Scott White Biological Consulting, 99 East C St. #206, Upland, CA 91786

Bureau of Land Management

Habitat of Nine-mile Canyon Phacelia

Along the Sierras from Owens Peak north to Nine-mile Canyon and west to the Bonita Meadows area, and Sand Canyon ACEC provide habitat. The NDDB lists nine populations, three of which are in the planning area. Two of those three are on Owens Peak while the third one is in Nine-mile Canyon. All known populations are on BLM or Forest Service lands. Within the planning area all populations are on BLM Lands.

OWEN'S PEAK LOMATIUM

Regional Summary of Owen's Peak Lomatium

<table>
<tr><td>Fed: BLM Sensitive
State: None
CNPS: List 1B, R-3, E-1, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>All known occurrences are along less than three linear miles of the eastern Sierra Nevada Mountains from Owens Peak south to the Mount Jenkins area.</td><td><u>Occurrence</u>: Eastern slopes of Owens Peak at approximately 8,000 feet elevation in gravelly to sandy soil. <u>Other Rare Species</u>: Sweet-smelling monardella, Nine-mile Canyon phacelia, Hall's daisy, and Muir's raillardella.</td><td><u>Elevation</u>: Occurs between 7,200 and 8,100 feet elevation. <u>Habitat</u>: rocky, open talus slopes derived from granitic or metamorphic substrates in mixed coniferous forests or pinyon pine-canyon live oak woodland. <u>Associated Species</u>: Associated with Jeffrey pine, limber pine, singleleaf pinyon, sugar pine, white fir, and Sierra juniper.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: Mount Jenkins, North Morris Peak, Owens Peak.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Owens Peak Wilderness.</td></tr>
<tr><td colspan="3">Threat Analysis: The existence of only three confirmed populations in a small range poses the greatest threat to the species, which could be affected by climatic fluctuations, accidents, or other extreme phenomena; Pacific Crest Trail bisects two of the three populations, so that trail maintenance could adversely affect the species; the steep, rugged terrain somewhat minimizes the impacts associated with pedestrian traffic.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Allotment (habitat too isolated and rugged for livestock). Trail Maintenance: Training of PCT maintenance crews.</td></tr>
</table>

Major Information Sources: Darin L. Banks, Curatorial Assistant, Herbarium, Rancho Santa Ana Botanic Garden, 1500 N. College Ave., Claremont, California 91711; BLM - Barstow and Ridgecrest Resource Area staff.

PARISH'S ALKALI GRASS

Regional Summary of Parish's Alkali Grass

Fed: FWS Candidate for Threatened or Endangered **State**: None **CNPS**: List 1B, R-3, E-3, D-2	**Habitat Requirements in the WMPA**	
General Occurrence in WMPA:	**Specific Occurrence in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Only one known location in the WMPA.	Occurrence: The one occurrence is on private land, at Rabbit Springs; in 1992, 150 plants were found in a 500 square foot area; most of the plants occur on the north side of Rabbit Springs Road in an unfenced area; although not found elsewhere in the Mojave Desert during extensive surveys in 1993, may occur at unexplored seeps and springs on BLM land within Joshua tree woodland or creosote bush scrub.	Elevation:In California at 2,870 feet, although one Arizona population is at about 5,000 feet elevation. Habitat: The Rabbit Springs site is described as "...a large alkaline spring in open desert that has formed a large spring mound by accumulation of sand and dust trapped in the dense vegetation supported by the spring;" it is dependent on continuously wet or moist soil during the growing season (winter to spring), with strongly alkaline and/or saline water at the surface. Associated Species: Mexican rush, Prince's plum, monkey flower, popcorn flower.
Jurisdictional Occurrence: San Bernardino Co.		
WMPA Locations: Rabbit Springs near Lucerne Valley.		
Committed Long-term Management: None.		
Threat Analysis: Rabbit Springs Road, the drainage channel, and the artificial pond probably all destroyed some habitat; ground water pumping or flood control could adversely affect this single population; even a single year when the spring does not flow may be sufficient to eliminate this species from California; non-native, salt-tolerant plant species at Rabbit Springs could out compete this population; cattle grazing likely results in trampling, increased erosion, and soil disturbance; the most significant long-term threat may be residential development, which could potentially eradicate the species from California.		

Major Information Source: Julie Greene, P. O. Box 1752, Corona, CA 91718 and Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

PARISH'S DAISY

Regional Summary of Parish's Daisy

Fed: Threatened **State**: None **CNPS**: List 1B, R-2, E-3, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
California endemic restricted to the north slope of the San Bernardino Mountains with isolated occurrences as far east as Yucca Valley and possibly the Little San Bernardino Mountains; most of the population is on the San Bernardino National Forest, south of the WMPA.	Occurrence: North foot of the San Bernardino Mountains from Furnace Canyon to Terrace Springs/Round Mountain, Burns Reserve area in Pioneertown. Other Rare Species: Cushenbury buckwheat, Cushenbury milkvetch, Cushenbury oxytheca.	Elevation: Occurs between 3,700 and 6,200 feet elevation (maybe as low as 2,625 or as high as 6,560 feet). Habitat: Almost entirely, if not completely, restricted to limestone substrates; most commonly found either along washes at canyon bottoms or on loose alluvial deposits on adjacent benches. Associated Species: Pinyon pine, Bigberry manzanita, purple sage, rabbit brush, Mormon tea.
Jurisdictional Occurrence: BLM, San Bernardino Co., State Lands Commission, Yucca Valley.		
WMPA Locations: Marble Canyon; Cactus Flat (Cushenbury Canyon); 1.5 miles east of Baldwin Lake; 8.0 miles south of Warren's Well (at Yucca Valley Airport); 0.25 miles northwest of Cushenbury Canyon at the outwash of Marble Canyon; 1.1 miles northeast of Cushenbury; 0.6 miles southeast of Cushenbury Springs; mouth of Bousic and Furnace Canyon; outwash fan of Arctic Canyon; Rattlesnake Canyon, south of Old Woman Spring; Burns Pinyon Ridge Reserve; Terrace Springs - Round Mountain vicinity. BLM: near Monarch Flat, Cushenbury Springs, and Arrastre Creek near Round Mountain.		
Committed Long-term Management: Burns Pinyon Ridge Reserve.		
Threat Analysis: Clearly declining, but still among the more common of the limestone endemics of the San Bernardino Mountains; seems better able to recover after disturbance than some of the other limestone endemics, perhaps due to its ability to spread vegetatively; primary threat is limestone mining; sand and gravel mining, off-highway vehicles. Low density residential development in the Pioneertown area is an additional, but lesser, threat. Some areas adjacent to active mines are covered with a thin layer of dust that hardens into a cement-like substance which renders potential habitat unsuitable for the species.		
Management Policies: BLM: Mineral Exploration and Development: Nearly the entire limestone formation where Parish's daisy is found is valuable for mining, although infrastructure costs are prohibitive east of Highway 18. More than 90% of the public lands have mining claims. Cattle/Horse Grazing: The Rattlesnake Cattle Allotment occurs within this species' habitat.		

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

PARISH'S PHACELIA

Regional Summary of Parish's Phacelia

Fed: BLM Sensitive **State**: None **CNPS**: List, R-, E-, D-	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
West Mojave Desert to Nevada. Disjunct population in West Mojave contains millions of individuals in wet years. First described from Rabbit Springs near Lucerne Valley; not relocated.	On small dry lakes between Manix tank trail and Coyote Dry Lake. Absent from Coyote Dry Lake	Elevation: 2400-3600 ft. Habitat: Clay to alkaline soils; dry lake margins. Associated Species: silverscale, allscale, poverty weed, desert plantain, gilia, evening primrose, peppergrass. Can co-occur at lake margins with *Phacelia pachyphylla*.
Jurisdictional Occurrence: San Bernardino County, BLM.		
WMPA Locations: 5 mi. SE Coyote Dry Lake, 25 mi. NE Barstow.		
Committed Long-term Management: None		
Threat Analysis: Potential for OHV damage to populations; expansion of Fort Irwin could impact populations.		
Management Policies: BLM: Utility Transmission: The Mead/McCullough-Victorville /Adelanto electrical transmission line was constructed with mitigation for this species (two sites were avoided). Cattle /Horse Grazing: Grazing exists in this species' habitat in the Cronese Lakes Allotment. Barstow Resource Area records indicate repeated overgrazing in this species' habitat in the past.		

Major Information Source: BLM, Barstow Resource area files.

Bureau of Land Management

Habitat of Parish's Phacelia

The only two populations of this plant found in California are near Coyote Dry Lake (Manix Tank Trail). All land in the area is in "Moderate Use" class.

PIUTE MOUNTAINS JEWEL-FLOWER

Regional Summary of Piute Mountains Jewel-flower

Fed: BLM Sensitive **State**: None **CNPS**: List 1B, R-3, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Apparently endemic to Piute Mountains of Kern County, with all known locations in the vicinity of the Bodfish Piute cypress grove, southeast of Bodfish in the Lake Isabella South quadrangle and in the Cache Peak area.	Occurrence: The only two known occurrences are at Champagne Spring on the northwest shoulder of Cache Peak and on Sweetwater Ridge southeast of Cache Peak.	Elevation: Occurs between 3,600 and 7,000 feet elevation. Habitat: Though typically found in cypress groves, may also be found in broad-leaved upland forests, closed-cone coniferous forests, and pinyon-juniper woodland; substrates include shattered metamorphic rock, gravel, gravelly loam, and heavy clay soils; stony gabbro substrates and very dark brown-red soil and rock are also utilized. Associated Species: Mostly associated with groves of Bodfish Piute cypress and California juniper; Cache Peak occurrences are with canyon live oak and pinyon pine.
Jurisdictional Occurrence: BLM, Kern County		
WMPA Locations: Champagne Spring on the northwest shoulder of Cache Peak; Sweetwater Ridge southeast of Cache Peak		
Committed Long-term Management: None.		
Threat Analysis: Population counts and estimates are few and somewhat contradictory, so that no clear estimates (even of known occurrences) are given; maintenance of wind energy facilities is a primary threat; all occurrences are threatened by off-highway vehicle use on public lands and future construction on private lands; construction or mining are potential threats.		
Management Policies: BLM: Cattle/ Horse Grazing: Area is within the Hansen Common Allotment but habitat is too isolated and rugged for livestock.		

Major Information Sources: Julie A. Greene, P. O. Box 1752, Corona, CA 91718 and Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

RED ROCK TARPLANT

Regional Summary of Red Rock Tarplant

Fed: FWS Species of Concern **State**: Rare **CNPS**: List 1B R-3, E-2, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Restricted to El Paso Mountains within Red Rock Canyon State Park	Occurrence: El Paso Mountains Other Rare Species: Twisselman's poppy, Charlotte's phacelia.	Elevation 2400 - 3000 feet. Habitat: Seeps, springs, and seasonally moist alluvium. Associated Species: creosote bush, burro bush.
Jurisdictional Occurrence: California State Parks.		
Specific WMPA Locations Cited: Red Rock Canyon State Park.		
Committed Long-term Management: Red Rock Canyon State Park.		
Threat Analysis: Potential for invasion by tamarisk.		

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521

California State Park

Habitat of Red Rock Tarplant

This species is endemic to the area around Red Rock Canyon and portions of Last Chance Canyon in the El Paso Mountains. The plant is an annual herb that grows in washes and sand flats in the park. It is known from several sites in Red Rock Canyon, its tributaries, and adjacent south draining canyons, all at the west end of the El Paso Mountains. Populations will also gather near roadsides. All known occurrences are within the planning area. Ten occurrences are known and they occur on either Red Rock Canyon land or BLM land (CDFG 1989). These BLM sites are now within the Red Rock Canyon State Park as a result of the California Desert Protection Act.

ROBISON'S MONARDELLA

Regional Summary of Robison's Monardella

Fed: BLM Sensitive **State**: None **CNPS**: List, R-, E-, D-	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrences in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Robinson's monardella is endemic to the Little San Bernardino Mountains.	Occurrence: This species is endemic to the southern WMPA in the Little San Bernardino Mountains, largely within Joshua Tree National Park and immediately north near Sheep Hole Pass.	Elevation: Occurs between 3,600 to 4,900 feet in elevation Habitat: This species is found in granitic boulders in pinion-juniper woodland, Joshua tree woodland, and creosote bush scrub. Associated Species: pinyon pine, California juniper, Joshua tree.
Jurisdictional Occurrence: JTNP, San Bernardino Co., BLM, Yucca Valley.		
WMPA Locations: JTNP, Sheep Hole Pass, Yucca Valley.		
Committed Long-term Management: JTNP, Big Morongo ACEC, Sheephole Wilderness.		
Threat Analysis: Limited to occasional damage from rock climbing; taxonomic resolution needed.		

Major I
California, Riverside, California 92521.

Joshua Tree National Park

Habitat of Robison's Monardella

All populations occur in the northwest section of the park, within the planning area. One population is within a campground, two near Keyes Ranch (park housing), and a population is located in the quartz monzonite outcrops in Wonderland of Rocks. The plants seem to be abundant, but widely scattered, and have been known from the area since at least 1938. Potential habitat covers 40-square miles. The majority of known locations are within the park boundaries.

SAGEBRUSH LOEFLINGIA

Regional Summary of Sagebrush Loeflingia

<table>
<tr><td>Fed: None
State: None
CNPS: List 1B, R-2, E-2, D-2</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrence in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>The known distribution is largely in the cold deserts of the Great Basin, extending south into somewhat similar habitats on the western Mojave Desert.</td><td><u>Occurrence</u>: Reported from sandy dunes and flats in alkaline soils on and in the vicinity of Edwards AFB.</td><td><u>Elevation</u>: Occurs at elevations of 2,300 to 4,000 feet. <u>Habitat</u>: Substrates are comprised of sandy soils of desert dunes and flats in Great Basin sagebrush scrub and Mojave Desert scrub; it reportedly occurs on “stiffer, more alkaline soils” in the west Mojave. <u>Associated Species</u>: creosote bush, burro bush, salt bush, golden gilia.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Edwards AFB, Kern County, Los Angeles County, CDFG.</td></tr>
<tr><td colspan="3">WMPA Locations: Buckhorn Dry Lake; near Buckhorn Lake on the route to ‘Old Pancho Barnes’ place; south end of Rogers Dry Lake; five miles north of Lancaster in Los Angeles County; Edwards AFB near the intersection of Mercury Blvd. and 140th St.; washes west of Rosamond Hills; near Boron.</td></tr>
<tr><td colspan="3">Committed Long-term Management: None.</td></tr>
<tr><td colspan="3">Threat Analysis: Due to its poorly understood distribution, threats are not well known; it is reported to be threatened by development in the Rosamond Hills area; cattle grazing occurs but no impacts were detectable; Borate mining.</td></tr>
</table>

<u>Major Information Source</u>: Julie Greene, P. O. Box 1752, Corona, CA 91718 and Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

SAND LINANTHUS

Regional Summary of Sand Linanthus

<table>
<tr><td>Fed: None
State: None
CNPS: List 2, R-1, E-2, D-1</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Sand linanthus occurs on the Mojave desert of California and southern Nevada where it is widespread in Clark, Esmeralda, and Nye Counties. In California it occurs from north of Yucca Valley to Eureka Valley in Death Valley National Park.</td><td>Occurrence: This species occurs widely in the eastern and northern portions of the WMPA. Populations are known from Barstow, Pisgah crater, Cronese Valley, Pipes wash, Twentynine Palms Marine Corps Air-Ground Combat Center, Ridgecrest, Searles Valley, and Poison Canyon.</td><td>Elevation: Occurs between 400 and 4,900 feet in elevation.
Habitat: Sand linanthus occurs in loose wind blown sands or loose sandy to fine gravelly soils, on dunes, alluvial slopes, valley flats, or along washes. It is found in creosote bush habitat as well as desert sink scrub and desert saltbush scrub.
Associated Species: creosote bush, saltbush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Twentynine Palms Marine Corps Air-Ground Combat Center, Inyo and San Bernardino Counties, BLM, Barstow, Ridgecrest.</td></tr>
<tr><td colspan="3">Specific WMPA Locations Cited: Barstow, Pisgah crater, Cronese Valley, Pipes wash, Twentynine Palms Marine Corps Air-Ground Combat Center, Ridgecrest, Searles Valley, and Poison Canyon.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Cronese Lakes ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Possible recreational vehicle activity due to the open nature of occupied habitat.</td></tr>
</table>

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

SHORT-JOINTED BEAVERTAIL

Regional Summary of Short-jointed Beavertail

<table>
<tr><td>Fed: BLM Sensitive
State: None
CNPS: List 1B, R-3, E-2, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrence in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Mostly occurs along the northern slopes of the San Gabriel Mountains between Palmdale and Cajon Pass, more or less following the San Andreas rift zone; some reports are between Cajon Pass and Mojave River Forks.</td><td>Occurrence: Most of the range lies within the WMPA, although the range extends south into lands administered by the U.S. Forest Service and several areas around Newhall.</td><td>Elevation: Occurs mostly between 3,500 and 6,500 feet elevation, although overall range is 3,000 to 7,500 feet. Habitat: Substrates are diverse, including sandy to rocky soils, open stream beds, and rocky slopes; occurs in chaparral, Joshua tree woodland, Mojave Desert scrub, and pinyon-juniper woodland. Associated Species: Associated with Joshua tree, California juniper, scrub oak, ceanothus, California buckwheat, pinyon pine, purple sage, and linear-leaved goldenbush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM, Los Angeles County, San Bernardino County, Palmdale, Hesperia.</td></tr>
<tr><td colspan="3">WMPA Locations: Palmdale; east of Cajon Pass, through Horsethief Canyon and Summit Valley to the Mojave River Forks south of Hesperia; pinyon-juniper woodland in Pinon Hills; Cajon Pass and Baldy Mesa areas; 23 individuals found south of Palmdale; south Phelan; several hundred plants in Big Rock Creek at 1600 meters elevation; Oak Hills; northeast Wrightwood; Hesperia Airport; L.A. County’s Significant Ecological Areas including Little Rock Creek, Big Rock Creek, and Mescal Canyon.</td></tr>
<tr><td colspan="3">Committed Long-term Management: None.</td></tr>
<tr><td colspan="3">Threat Analysis: There is no information on trends for this species; threatened by removal from residential lots, off-highway vehicles, erosion, trampling during sheep grazing, development, collection for landscaping.</td></tr>
</table>

Major Information Sources: Pamela MacKay, Department of Biology, Victor Valley College, 18422 Bear Valley Road, Victorville, California 92392; BLM - Barstow and Ridgecrest Resource Area staff.

SMALL-FLOWERED ANDROSTEPHIUM

Regional Summary of Small-flowered Androstephium

<table>
<tr><td>Fed: None
State: None
CNPS: List 2, R-3, E-1, D-1</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>In California, known from Cronese Valley, Cadiz Valley, and along Interstate 15 near Alvord Mountain; all three occurrences are on remote federal lands.</td><td><u>Occurrence</u>: The Cronese Valley and Alvord Mountains occurrences are inside the WMPA, with the Cadiz Valley location along the southeastern boundary.</td><td><u>Elevation</u>: All reported occurrences are between 890 and 2,100 feet elevation. <u>Habitat</u>: Appears to be a plant of open sandy flats and bajadas at low to moderate elevations; should stress that it is found on sandy substrates, often stabilized blowsand; relatively frequent summer rainfall may be important; reported populations are widely scattered and additional populations could doubtless be found with additional surveys. <u>Associated Species</u>: creosote bush, burro bush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: Cronese Valley; along Interstate 15 near Alvord Mountain; Cave Mountain.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Cronese Lakes ACEC.</td></tr>
<tr><td colspan="3">Threat Analysis: Significant threats are not obvious; cattle grazing not considered significant; effects of off-highway vehicle traffic have not been quantified; it appears that the species was never common in California; probably more common than currently known.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Utility Transmission: Barstow Resource Area records indicate several populations of this species were avoided during construction of a utility corridor in the Cronese Lakes and Cave Mountain vicinity. Cattle Grazing: The Cronese Lakes and Cady Mountain cattle Allotments occur within this species' habitat.</td></tr>
</table>

<u>Major Information Sources</u>: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521; BLM - Barstow and Ridgecrest Resource Area staff.

SPANISH NEEDLE ONION

Regional Summary of Spanish Needle Onion

<table>
<tr><td>Fed: None
State: None
CNPS: List 1B, R-3, E-1, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrence in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>A plant of high elevation, rocky habitats; only two populations are known, both along the crest of the southern Sierra Nevada Mountains; a 1987 estimate is that only about 10% of the possible habitat has been surveyed for this species.</td><td>Occurrence: The Spanish Needle Peak population (of several thousand individuals) appears to straddle the WMPA boundary, and the Tehachapi population (Horse Canyon) is a short distance west of the WMPA, with about half of the population on BLM land; the population at Spanish Needle Peak occurs in soil pockets of dark-colored metamorphic outcrops and on steep talus slopes at 7,216 to 7,708 feet elevation; associates Cercocarpus intricatus and Dudleya calcicola imply the presence of carbonate rock in the area. Other Rare Species: None identified, although several other species occur in the Owens Peak Wilderness.</td><td>Elevation: Occurs between 5,800 and 7,500 feet elevation. Habitat: Occurs in open, predominantly conifer forests; surrounding vegetation is very sparse pinyon/juniper/scrub oak woodland on volcanic tuffs and agglomerates; has been found in a small wildflower field/meadow adjacent to ephemeral creeks and dry, stony, open slopes. Associated Species: Associated with Jeffrey pine, sugar pine, pinyon pine, canyon live oak, western juniper, and mountain mahogany.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM.</td></tr>
<tr><td colspan="3">WMPA Locations: Spanish Needle Peak.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Owens Peak Wilderness.</td></tr>
<tr><td colspan="3">Threat Analysis: The only known threat is maintenance on the Pacific Crest Trail.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle/ Horse Grazing: Within Walker Pass Allotment, but habitat too isolated and rugged for livestock. Trail Maintenance: Training of PCT maintenance crews.</td></tr>
</table>

Major Information Source: Barbara Pitzer, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

SWEET-SMELLING MONARDELLA

Regional Summary of Sweet-smelling Monardella

Fed: BLM Sensitive **State**: None **CNPS**: List 1B, R-3, E-1, D-3	**Habitat Requirements in the WMPA**	
General Occurrence:	**Specific Occurrence in WMPA and Other Rare Species Associations**	**Elevation, Habitat, and Associated Species**
Restricted to three populations along the crest of the southern Sierra Nevada in Kern, Inyo, and Tulare Counties.	Occurrence: Two of the three populations (Owens Peak and Cottonwood Creek) are on BLM lands at the western edge of the WMPA. Other Rare Species: Owens Peak lomatium, DeDecker's clover .	Elevation: Occurs between 8,200 and 11,000 feet elevation. Habitat: Found only on granitic soils on the slopes of subalpine coniferous forests and alpine boulder and rock fields. Associated Species: Associated with Olancha Peak buckwheat, DeDecker's clover, Owens Peak lomatium, and Gilman's goldenbush.
Jurisdictional Occurrence: BLM.		
Specific WMPA Locations Cited: Cottonwood Creek; Owens Peak.		
Committed Long-term Management: Owens Peak Wilderness.		
Threat Analysis: The greatest threat is its vulnerability to stochastic extinction events because only three distinct, highly restricted and small populations apparently exist; there are no immediate threats to this species and long-term threats are not obvious.		

Major Information Source: Mark Elvin, 10711 Rives Ave., Downey, California 90241.

TRIPLE-RIBBED MILKVETCH

Regional Summary of Triple-Ribbed Milkvetch

<table>
<tr><td>Fed: Endangered
State: None
CNPS: List 1B, R-3, E-1, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Endemic to California, restricted to the dry slopes around the head of the Coachella Valley (Whitewater Canyon and Big Morongo Canyon).</td><td>Occurrence: Occurs at three locations within the WMPA: Little San Bernardino Mountains, Big Morongo Canyon, and Dry Morongo Canyon. Is expected to occur in the upper reaches of Mission, Dry Morongo and Big Morongo Creeks, and the western portions of Joshua Tree National Park; all populations appear to be marginal or transitory.</td><td>Elevation: Occurs between 1,300 and 4,000 feet elevation, and all but one population (at Keys Ranch) are below 2,000 feet elevation; the preferred range appears to be 1,500 to 1,800 feet. Habitat: Most commonly found along washes, on canyon bottoms, alluvial fans below canyon bottoms, or on decomposed granite on canyon slopes; restricted to sandy or gravelly soils in arid canyons at the edge of the desert; somewhat tolerant of or may require either natural or manmade soil disturbance. Associated Species: brittle bush, cheese bush, rabbit brush, burro bush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM, San Bernardino County, JTNP.</td></tr>
<tr><td colspan="3">WMPA Locations: Big Morongo Canyon, Dry Morongo Canyon, JTNP (Keys Ranch, Little San Bernardino Mountains).</td></tr>
<tr><td colspan="3">Committed Long-term Management: Big Morongo Canyon ACEC; JTNP.</td></tr>
<tr><td colspan="3">Threat Analysis: With every flood seeds and plants are destroyed or washed downstream out of the habitat area; since habitat modification within its range has not been extensive, it does not appear likely that human activity has been a significant factor in its present scarcity; given its occurrence in washes, there is some threat from off-highway vehicle activity; there is a marginal threat of mining if gravel is taken from Whitewater Canyon (outside the WMPA).</td></tr>
</table>

Major Information Source: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.

TWISSELMAN'S POPPY

Regional Summary of Twisselman's Poppy

<table>
<tr><td>Fed: FWS Species of Concern, BLM Sensitive
State: None
CNPS: List1B, R-3, E-2, D-3</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrences in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>Red Rock poppy is known only from the northeast end of the Rand Mountains and the El Paso Mountains, Kern County, and possibly from the Black Mountains in Death Valley National Park, Inyo County.</td><td><u>Occurrence</u>: Red Rock Canyon State Park; Searles Station and possibly from Edwards AFB.
<u>Other Rare Species</u>: Red Rock Tarplant.</td><td><u>Elevation</u>: Occurs between 2,300 and 3,280 feet in elevation
<u>Habitat</u>: Canyon bottoms with rhyolitic tuffs and granitics.
<u>Associated Species</u>: creosote bush, burro bush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: Red Rock Canyon State Park, Kern County; possibly on Edwards AFB, San Bernardino Co. (the population near Atolia is threatened by mining activity in the area. Currently that population has been mapped and is avoided).</td></tr>
<tr><td colspan="3">WMPA Locations: Rand and El Paso Mountains.</td></tr>
<tr><td colspan="3">Committed Long-term Management: Red Rock Canyon State Park.</td></tr>
<tr><td colspan="3">Threat Analysis: Vehicle damage along narrow wash habitats.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Sheep Grazing: limited to years with adequate forage production, only one pass by sheep, and other restrictions as noted in the sheep consultation (desert tortoise) for Cantil Common Sheep Allotment.</td></tr>
</table>

<u>Major Information Sources</u>: Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521-0124; Barbara G. Pitzer, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, California 92521-0124.

California Department of Parks And Recreation

Habitat of Twisselman's Poppy

In 1991 there were approximately 16,000 plants.

WHITE-MARGINED BEARDTONGUE

Regional Summary of White-margined Beardtongue

<table>
<tr><td>Fed: BLM Sensitive
State: None
CNPS: List 1B, R-3, E-2, D-2</td><td colspan="2">Habitat Requirements in the WMPA</td></tr>
<tr><td>General Occurrence:</td><td>Specific Occurrence in WMPA and Other Rare Species Associations</td><td>Elevation, Habitat, and Associated Species</td></tr>
<tr><td>In California, known from only one location; other populations occur in Arizona (over 100 square miles) and Nevada (Clark County).</td><td>Occurrence: California's only population (of more than 450 plants) occurs within the WMPA in a large four-mile long wash near Pisgah Crater and Lavic Lake, extending south from Sleeping Beauty Peak, crossing Interstate 40, and terminating in a spreading basin south of I-40. Other Rare Species: potentially crucifixion thorn and sand linanthus.</td><td>Elevation: Occurs at elevations between 2,000 and 3,000 feet in alkaline soil. Habitat: Associated with fine alluvial sand in a wide wash and wash terraces and subwashes within a creosote bush scrub community; sands are deep and stabilized, holding the long taproot in place; also present in wind-blown sand; there is a tendency for the plant to occur in scattered groups of up to 20 individuals. Associated Species: creosote bush, burro bush, cheese bush.</td></tr>
<tr><td colspan="3">Jurisdictional Occurrence: BLM, San Bernardino County.</td></tr>
<tr><td colspan="3">WMPA Locations: Near Pisgah Crater and Lavic Lake, extending south from Sleeping Beauty Peak.</td></tr>
<tr><td colspan="3">Committed Long-term Management: A five acre exclosure within Pisgah Crater RNA.</td></tr>
<tr><td colspan="3">Threat Analysis: California's population is bisected by a freeway, powerline, fiber optic cable installation; utility station installation; and three pipelines; utility access roads provide access to off-highway vehicle enthusiasts; the remote location of the population and scattered nature of the plants limits the amount of damage from off-highway vehicles, so that the population is not likely to be extirpated by this type of impact; anecdotal accounts of military personnel camping in the area suggest that this could threaten certain portions of the population; some mining claims may result in localized disruptions.</td></tr>
<tr><td colspan="3">Management Policies: BLM: Cattle Grazing: The Cady Mountain Allotment occurs within this species' habitat. Mineral Exploration and Development: Mineral actions in vicinity encouraged to avoid known populations. Utility Line Installation and Maintenance: IXC cable / booster station project along I-40. IXC constructed a five acre exclosure.</td></tr>
</table>

Major Information Sources: Pamela MacKay, Department of Biology, Victor Valley College, 18422 Bear Valley Road, Victorville, California 92392; BLM - Barstow and Ridgecrest Resource Area staff.

APPENDIX A
PROJECT MITIGATION

APPENDIX A.1
BLM DESERT TORTOISE NEW PROJECT MITIGATION

The measures listed below, which apply to new projects, are intended to minimize impacts to the tortoise and are selectively included in biological opinions issued by USFWS and in land use decisions rendered by the BLM on federal lands.

General Mitigation Measures

1. Authorization of Biologists

An "Authorized/Qualified biologist" usually (a)possesses a bachelor's degree or graduate degree in biology, ecology, wildlife biology, herpetology, or related fields; (b) demonstrates an appropriate amount of time and experience in the field (usually 60 days); and (c) has the ability to recognize and record all types of tortoise sign.

An Environmental Monitor, with prior approval from the BLM/USFWS, can assist the Authorized Biologist in all activities listed above, and may, only in emergency situations, handle tortoises. In practice, the Biologist performs all activities where a tortoise is likely to be handled (clearance surveys, preconstruction surveys, etc.); the Environmental Monitor observes/monitors construction where tortoises are less likely to be handled, but handles tortoises in emergency situations if the Biologist cannot be called to the site to move the animal.

2. Worker Training

All workers, including participating agency employees and construction and maintenance personnel, and others who implement authorized actions shall be given special instruction in protection of listed species including occurrence, sensitivity, and activity patterns of the desert tortoise. Instruction shall also include legal protection and penalties for violation of federal and State laws.

3. Compliance

The project proponent shall designate an individual as field contact representative (FCR) who shall be responsible for overseeing compliance and for coordination with the authorizing agency. Compliance shall include conducting species surveys, proper removal of species from areas being impacted, assurance that a sufficient number of qualified biologists are present during surface disturbance, and that all conditions of the authorization are being met by proponent, contractors, and workers. The FCR shall have the authority to halt activities that are in not in compliance with the authorization.

After completion of the project, the participating agency which authorized the project shall conduct a review to determine if the project proponent complied with the conditions of authorization. Corrective actions shall be required of the proponent where conditions have not been met.

4. Compensation

A mitigation fee based on the amount of acreage disturbed shall be required of proponents of new development. The formula used to determine the amount of acreage to be acquired is described in the California Statewide Desert Tortoise Management Policy and 1991 Management Oversight Group (Desert Tortoise Compensation Team 1991), which considers the following factors:

a. Habitat category,
b. Impact on adjacent lands reducing tortoise densities,
c. Whether or not the use will tend to induce growth,
d. Duration of the effect i.e., short term less than 10 years, long term greater than 10 years.
e. Whether or not there is moderate to heavy existing disturbance

These factors are added together to arrive at an acreage multiplier used to determine the amount of compensation acres to be acquired by the project proponent. Category III habitat receives a compensation rate of 1.0 regardless of other factors. The mitigation fee formula was derived through the efforts of an interstate and interagency committee and, in California, is utilized by both BLM and the and the California Department of Fish and Game to determine the amount of compensation required of projects developed in tortoise habitat. In addition, the results are almost invariably recognized as suitable by USFWS.

5. Pre-Construction or Clearance Surveys

Pre-construction surveys shall be conducted to locate and remove desert tortoises prior to grading or actions which might result in harm to a desert tortoise or tortoise habitat. The survey shall be conducted by an authorized biologist within 24 hours of the onset of the surface disturbance unless a tortoise-proof fence has been installed that would prevent re-entry of the animals.

Unlike "presence-absence surveys" to determine if tortoises are present in a given project area, clearance surveys are intended to locate and remove all tortoises from harm's way. An integral part of the clearance survey, therefore, if locating and excavating all burrows that are found within the impact zone; the project area to be disturbed. Tortoises found in such burrows are moved to natural or artificial burrows at this time so as not to be harmed by construction activities.

6. Surface Disturbance

All surface disturbing activity shall be limited to land area essential to the project. In determining these limits, consideration shall be given to topography, public health and safety, placement of

facilities, and other limiting factors. Work area boundaries and special habitat features shall be appropriately marked to minimize disturbance. Where possible, previously disturbed areas shall be used as a work site and for storage of equipment, supplies and excavated material.

Pre-construction activity such as removal of vegetation shall occur in the presence of a qualified biologist. No hazards to desert tortoises shall be created by this activity (e.g., auger holes or any steep-sided depressions); such hazards shall be eliminated each day prior to the work crew leaving the site.

Large disturbed areas, such as open-pit mines and landfills shall be enclosed with tortoise-proof fencing to keep desert tortoises out of the work area. The fencing shall be removed when restoration of the site is completed. Temporary fencing shall be required around test sites where trenching or drill holes could trap animals or around other small, short-term projects where tortoises could move into the work area. Occasionally, seasonal restrictions and/or monitoring are required to alleviate the need for fencing.

Project maintenance and construction, stock piles of excavated materials, equipment storage, and vehicle parking shall be limited to existing disturbed areas wherever possible. Should use of existing disturbed areas prove infeasible, any new disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows or vegetation, public health and safety, and other limiting factors. Special habitat features, particularly tortoise burrows, shall be flagged by the qualified biologist so that they may be avoided by installation equipment and during placement of poles and anchors.

Construction area, including impact zones, staging areas, and project boundaries shall be clearly delineated with surveyor's lath, flagging, etc. and personnel shall be informed that all construction activities are to remain within the flagged area.

7. Refuse Disposal

All trash and food items generated by construction and maintenance activities shall be promptly contained and regularly removed from the project sites to reduce the attractiveness of the area to common ravens and other desert predators. Portable toilets shall be provided on-site if appropriate.

8. Dogs

Dogs shall be restrained either by enclosure in a kennel or by chaining to a point within the tortoise-proof exclosure if one has been constructed for the activity. Most biological opinions prohibit dogs from being on the project site.

9. Ravens

Structures which may function as common raven nesting or perching sites are not authorized except

as specifically stated in the appropriate BLM document. The proponent shall provide a graphic description of all structures to be erected on the site. Some actions are required to mitigate actual nesting on authorized structures, such as requiring the proponent to secure necessary permits to remove nests and to remove such nests in a timely fashion. USFWS does not (or rarely) authorize nest removal if birds are present in the nest, but does authorize nest removal after birds have left.

10. Firearms

Use of firearms in the project area shall be prohibited, except by law enforcement personnel.

11. Motorized Access

Where possible, motor vehicle access shall be limited to maintained roads and designated routes. Where temporary access off a maintained road or designated route is permitted, a qualified biologist shall travel with each work crew to ensure that all desert tortoises and their burrows are avoided, and that impact to the habitat is minimized. All vehicle tracks which might encourage public use shall be obliterated after temporary use.

Where access from a maintained road or designated route to a proponent's site is part of the approved development plan, length and location of the route shall be designed to minimize impact to the habitat. The amount of disturbed area shall be subject to the mitigation fee or compensation, and the route shall be designated "Limited Use" and not open to the public.

a. **Speed Limits**: Vehicle speed within a project area, along right-of-way maintenance roads and on routes designated for limited use shall not exceed 20 miles per hour. Speed limits shall be clearly marked by the proponent and workers shall be made aware of these limits.

b. **Tortoises Under Vehicles**: Vehicles parked in desert tortoise habitat shall be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the authorized biologist shall be contacted to move the animal from harm's way, or the vehicle shall not be moved until the desert tortoise leaves of its own accord. The authorized biologist shall be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes which could be harmful to the animal.

12. Route Maintenance and Surface Restoration

When required to mitigate impacts to desert tortoise, the following mitigation measures shall be implemented during all route maintenance and surface restoration projects:

a. **Heavy Equipment**: Operators of heavy equipment (such as roadgraders) shall be accompanied by a qualified biologist when working in desert tortoise habitat during the desert tortoise's active period (March 1 to October 31). The qualified biologist shall walk in front of the equipment during its operation and shall function as the FCR and have the responsibility and authority to halt all project activity should danger to a desert tortoise arise. Work shall proceed only after hazards to the

desert tortoise are removed, the desert tortoise is no longer at risk, or the desert tortoise has been moved from harm's way by an authorized biologist. This measure does not currently apply to County or Caltrans road work on BLM land and significant impacts are occurring.

During the desert tortoise's inactive period (November 1 to February 29), an on-site monitor is not required, but the equipment operator shall be qualified as described under term and condition 8d. Otherwise the operator shall be accompanied by a qualified biologist. The operator shall watch for desert tortoises while using the equipment and shall have the responsibility for preventing harm to desert tortoises, as described under term and condition 8d.

Operators of light equipment used for trail maintenance and project leaders for surface reclamation actions shall watch for desert tortoises during all project activities. They shall have the responsibility for preventing harm to desert tortoises, as described under term and condition 8a. They shall be qualified as described in 8d.

b. **Injury**: Should any desert tortoise be injured or killed, all activities shall be halted, and the authorized biologist immediately contacted. The biologist shall have the responsibility for determining whether the animal should be transported to a veterinarian for care, which is paid for by the project proponent, if involved. If the animal recovers, USFWS is contacted to determine the final disposition of the animal; few desert tortoises are returned to the wild.

c. **Report**: The equipment operator, or authorized biologist shall keep a tally of all desert tortoises seen, moved, injured or killed during the project. Other required elements are: rating the effectiveness of required mitigation, a breakdown of actual habitat disturbance, and suggestions for improving mitigation.

d. **Water Ditches**: The equipment operator or qualified biologist shall inspect water ditches for desert tortoise burrows before moving or shoveling any soil. If a desert tortoise burrow is present, the water ditch shall be left undisturbed if possible. If the equipment operator inspects water ditches for desert tortoise burrows, he or she shall be adequately trained in the identification of desert tortoise sign by the authorized biologist prior to conducting inspections.

e. **Burrows**: If a burrow is occupied by a desert tortoise and avoidance of the burrow is not possible during road maintenance or reclamation activities, the authorized biologist shall make the final determination. Only an authorized biologist may excavate the desert tortoise, following established protocols.

f. **Grading**: To avoid building up tall berms that may inhibit desert tortoise movement, the operator should minimize lowering of the road bed while grading. Berms higher than 12 inches or a slope greater than 30 degrees shall be pulled back into the road bed.

g. **Speed Limits**: The equipment operator shall watch for desert tortoises on the road whenever driving, transporting or operating equipment. Driving speeds shall not exceed 20 mph, and operating speeds should not exceed 5 miles per hour to allow for adequate visibility.

Special Mitigation Measures for Specific Uses

13. Commercial Filming

Site specific surveys shall be conducted by a qualified biologist prior to any commercial filming which might result in take of desert tortoises. All such activity shall be either relocated away from desert tortoise burrows or provisions made to safeguard the burrows and desert tortoises while filming proceeds. An on site qualified desert tortoise monitor may be required.

14. Mineral Exploration and Development

In addition to the general mitigation measures described above, the following special mitigation measures apply to small mining operations, minor exploration and test drill holes in which the surface disturbance or area from which desert tortoises are to be removed is less than ten acres:

a. **Compliance**: A qualified biologist shall be on-site during the initial mining activity.

b. **Explosives**: If explosives are authorized, the Bureau's Resource Area biologist shall verbally consult with the appropriate Service office to determine what measures shall be required to reduce the potential to take desert tortoises. These measures may include:

1) Seasonal restrictions upon the use of explosives;

2) Temporary removal of desert tortoises from areas potentially at risk during detonation either directly from the explosion or by thrown materials. All handling and storage of desert tortoises for this purpose shall be conducted as described in condition 3 by an authorized biologist.

3) Covering of desert tortoise burrows to reduce impacts of flying materials.

15. Non-Competitive Recreational Events

When required to mitigate impacts to desert tortoise, the following measures shall apply to all vehicle-oriented, dual-sport and other non-competitive trail events:

a. **Timing**: Events shall be held during the hibernation season for desert tortoises, generally considered to be between November 1 and March 1. Routes selected shall avoid impacting other special status plants and animal species. Any course flagging or markers shall be placed on the course not more than two weeks prior to the event and shall be removed within one week after conclusion of the event.

b. **Limits**: The event shall be restricted to designated routes and limited to 500 rider

participants per event. Participants shall not exceed 30 miles per hour through category I and II tortoise habitat. They shall be notified of this requirement at the beginning of the event and before the start of the event on any subsequent days. Racing shall be prohibited.

c. **Maps**: A map identifying the course shall be furnished to each entrant. The map shall clearly delineate maximum speed limits, authorized camp sites, and category I and II habitat, and shall include a statement cautioning that travel beyond the edge of the roads into undisturbed habitat is strictly prohibited.

d. **Parking**: Vehicles shall be parked at the side of the road or areas devoid of any perennial vegetation. Any entrants who abandon the event must exit the course on designated routes or public roads.

e. **Camping**: Overnight camping shall be limited to existing campgrounds or designated camp sites capable of accommodating the group. Selected camping areas shall be surveyed by a qualified biologist prior to the event to determine if desert tortoise burrows or other special status plant or animal species are present.

f. **Trash**: Trash and food items shall be carried out by the participants. The event proponent shall be responsible for assuring that trash and garbage are not left behind.

g. **Injury**: Injured tortoises found on the course shall be transported to an approved veterinarian (list provided to event organizers) at the earliest possible time. The proponent shall be responsible for the cost resulting from treatment of desert tortoises whose injuries resulted from the event.

h. **Clearance**: The entire course shall be surveyed by an authorized biologist within an hour before the event. In addition, an authorized biologist shall travel at the front of the event to ensure that the route is cleared of all desert tortoises. Desert tortoises found shall be moved approximately 100 feet off the course.

16. Competitive Events

These measures apply to organized OHV events in designated vehicle open areas.

a. Organized event promoters and sponsors shall designate an individual contact representative responsible for overseeing compliance with the special desert tortoise stipulations.

b. Prior to commencing the event, organized event promoters and sponsors shall provide event participants and spectators with the Bureau's printed materials describing: the occurrence of the desert tortoise in the area; the status of the desert tortoise; prohibitions against take and the penalties associated with take; and methods being employed as a part of the event to protect the desert tortoise and its habitat.

c. Organized event promoters and sponsors that fail to comply with any of the special recreation permit stipulations shall be prosecuted to the fullest extent possible.

d. Trash containers used for the race event shall be raven proof. Trash and food items shall be promptly contained and removed from the area within 24 hours of completion of the event.

e. Participants that violate any special desert tortoise stipulation shall be disqualified from the event. Support team members that fail to comply with the stipulations shall result in the disqualification of the associated rider(s). Anyone who accumulates three violations shall be barred from participating in any organized off-highway vehicle event for one year from the date of the third violation.

17. Utility Pipelines and Underground Cables

When required to mitigate impacts to desert tortoise, the following measures shall apply for the construction and maintenance of all pipelines, fiber optic lines and other utilities requiring trenching:

a. **Width**: Construction rights-of-way shall be restricted to the narrowest possible width.

b. **Exceptions**: All project construction and maintenance shall be restricted to the authorized right-of-way. If unforeseen circumstances require expansion beyond the right-of-way, the potential expanded work areas shall be surveyed for desert tortoises.

c. **Access**: Vehicular travel shall be limited to the right-of-way. Access to the right-of-way shall be limited to public roads and designated routes.

d. **Trenches**: Open trenches shall be regularly inspected by the authorized biologist at a minimum of once per day, and any desert tortoises that are encountered shall be safely removed. For small projects, escape ramps are sometimes required. The length of the trench left open at any given time shall not exceed that distance which will remain open for one week or less in duration. A final inspection of the open trench segment shall be made by the authorized biologist immediately prior to backfilling. Arrangements shall be made prior to the onset of maintenance or construction to ensure that desert tortoises can be removed from the trench without violating any requirement of the Occupational Safety and Health Administration.

e. **Maintenance**: Observations of desert tortoises or their sign during maintenance shall be conveyed to the field supervisor and a biological monitor. Employees shall be notified that they are not authorized to handle or otherwise move tortoises encountered on the project site.

f. **Compliance**: Sufficient authorized and qualified biologists shall be present during maintenance or construction activities to assist in the implementation of on-site mitigation measures for the desert tortoise and to monitor compliance. The appropriate number of biologists shall be dependent upon the nature and extent of the work being conducted and shall be stated in the right-of-

way grant for each particular action, after consultation with the specific Resource Area Office authorizing the action.

g. **Final Assessment**: The authorizing agency shall ensure that maintenance or construction activities are confined to the authorized work areas by means of a post-project assessment. The assessment may be conducted by the authorized biologist. If maintenance or construction activities have extended beyond the flagged work areas, the Bureau shall ensure that the project proponent restores these disturbed areas in an appropriate manner.

h. **Restoration**: The proponent shall be required to restore disturbed areas in a manner that would assist re-establishment of biological values within the disturbed rights-of-way. Methods of restoration shall include, but not be limited to: road closure, the reduction of erosion, respreading of the top two to six inches of soil, planting with appropriate native shrubs, and scattering any bladed vegetation and rocks, where appropriate, across the right-of-way.

18. Power Transmission

The following mitigation measures shall be implemented during all construction and maintenance of transmission lines:

a. **Surveys**: When access along the utility corridor already exists, pre-construction surveys for transmission lines shall provide 100 percent coverage for any areas to be disturbed and within a 100-foot buffer around the areas of disturbance. When access along the utility corridor does not already exist, pre-construction surveys for transmission lines shall follow standard protocol for linear projects.

b. **Access**: To the maximum extent possible, access for transmission line construction and maintenance shall occur from public roads and designated routes.

c. **Disturbed Areas**: To the maximum extent possible, transmission pylons and poles, equipment storage areas, and wire pulling sites shall be sited in a manner that avoids desert tortoise burrows.

d. **Restoration**: Whenever possible, spur and access roads and other disturbed sites created during construction shall be recontoured and restored.

e. **Ravens:** All transmission lines shall be designed in a manner that would reduce the likelihood of nesting by common ravens. Each transmission line company shall remove any common raven nests that are found on its structures. Transmission line companies must obtain a permit from the Service's Division of Law Enforcement to take common ravens or their nests.

Example
Terms and Conditions Required By
Two Recent Biological Opinions

Most major pipelines and transmission lines cross private and public owned lands in both city and county jurisdictions. They may be authorized by either state or federal agencies, and be required to obtain various types of local permits. If the project crosses any federal land with federally listed species, a Section 7 consultation may be initiated and a biological opinion obtained from USFWS. In recent years major projects have, without exception, obtained biological opinions and have complied with terms and condition similar to those listed for the two projects discussed below. For more information see Appendix J of *Federal Biological Opinion Analysis for the Proposed Eagle Mt. Landfill Project* (a copy is on file at the West Mojave Plan office in Barstow.)

8. The Cajon Crude Oil Pipeline

The following terms and conditions were set forth in the *Biological Opinion for the Construction and Maintenance of an Underground Crude Oil Pipeline Extending from the Western Mojave Desert to the Los Angeles Basin* (Cajon Pipeline) (1-8-93-F-9).

1. Handling of Tortoises -- Only persons authorized by USFWS and BLM shall handle any tortoises found during this action.

2. Halt Activity -- The authorized biologist shall have the authority to halt activity should danger to desert tortoises arise; and to allow work to proceed after the hazard is removed.

3. Raven Attractions -- All trash shall be placed in covered containers which shall be removed from the work site and taken to a landfill each night.

4. Firearms and Pets -- To prevent the harassment or death of tortoises, no firearms or pets shall be allowed at the work area.

5. Tortoises Under Equipment -- Prior to moving mobile equipment, employees shall be directed to look under such equipment for the presence of tortoises. No equipment shall be moved until the tortoise moves from under it or is removed by an authorized biologist.

6. Survey -- An authorized biologist shall complete a pre-activity survey of the project area prior to onset of surface disturbing activity, and within 48 hours of onset of construction. Unavoidable tortoise pallets and burrows shall be examined and tortoises removed and released nearby.

7. Buffer Zones -- Construction and maintenance shall be adjusted to maintain a minimum 50 foot construction-free buffer zone adjacent to pallets and burrows outside of the construction

ROW. A temporary fence shall delineate the construction-free buffer. Flags and fences to be removed within 60 days of the termination of construction or maintenance activity.

8. Employee Instruction -- All persons employed on the construction or maintenance project shall receive information about the desert tortoise prior to performing on-site work.

9. Flag Work Area -- Project area boundaries shall be clearly staked and flagged to minimize the potential for inadvertent straying of vehicles and equipment.

10. Limit Access -- Temporary fencing or gates shall be erected at access points to limit unauthorized personnel and vehicles.

11. Minimize ROW Width -- Project proponent shall clear the minimum ROW width possible, and minimize disturbance to the ROW when possible.

12. Removal of Ground Cover -- Excess slash, limbs and other material from construction or maintenance activities shall be cleared only to the extent necessary and stockpiled within the ROW to be used in reclamation and revegetation procedures.

13. Preserve Seed Bank -- Spoil material from trenching and grading activities shall be salvaged to preserve seedbank material. Topsoil shall be separated from other spoil material and bladed to a location outside of the windrowed material. After construction the seedbank material shall be replaced with appropriated equipment.

14. Removing Tortoises -- Tortoises should be allowed to move off-site without being handled or harassed. If moving them is necessary, then the biologist shall follow protocol to move them out of harms way.

15. Injured, Sick or Dead Tortoises -- Any dead tortoise observations shall be reported to BLM within 24 hours of observation. Sick or injured animals should be transported to a qualified veterinarian.

16. Construction and Maintenance Schedule -- To the extent possible, construction and maintenance activity shall be scheduled to occur during the period of desert tortoise aestivation; from October 15 to February 28.

17. Vehicle Speed Limit -- The speed limit on the ROW shall not exceed 20 mph. Existing routes of travel to the project ROW shall be used, and cross-country use of vehicles and equipment shall not occur.

18. Open Trenches -- Open pipeline trenches shall be inspected by an authorized biologist a minimum of three times a day and just prior to backfilling. Tortoises found will be removed

following protocol. The length of an open pipe trench shall not exceed the distance which shall remain open for one week or less in duration. Earthen escape ramps will be maintained at intervals of no greater than 0.25 miles.

19. Revegetation — All disturbed habitat shall be revegetated to pre-disturbance conditions in accordance with an approved plan. Seed shall be planted by drilling where appropriate. Broadcast seeding shall be used for inaccessible or small areas. Seed shall be covered by raking or harrowing. Only native species, adapted to local conditions shall be used. An authorized biologist shall be present during revegetation operations to remove tortoises from harm's way.

20. Report -- A close-out report will be provided to BLM and USFWS within 30 days of completion of construction activities. It shall include acres disturbed and tortoise observations and compensation for lost habitat.

9. The Mead-McCullough-Victorville 500kV Transmission Line

The following list of terms and conditions were included in the *Biological Opinion for the Proposed Mead/McCullough-Victorville/Adelanto Transmission Line* (1-6-90-F-46). This project involved the construction of a 202 mile long 500 kilovolt transmission line crossing public and private land.

1. Failure to Comply -- Failure to comply with reasonable and prudent measures or terms and conditions of this Opinion will result in suspension of the ROW permit until project is again in compliance. This applies to construction and maintenance.

2. Field Contact Representative -- A field contact representative shall be designated with authority to ensure compliance with stipulations and shall be responsible for coordination with BLM, USFWS and State wildlife agencies.

3. Pre-construction Activity -- Activity which could result in take of tortoises in any manner shall occur in the presence of a qualified biologist. Any hazards to tortoises created by pre-construction activity shall be eliminated each day prior to leaving the site.

4. Existing Access Roads --There shall be no permanent widening or upgrading of existing access roads.

5. New Access Roads -- Alignment of any new access roads will follow the designated area's landform contours, provided that such alignment does not additionally affect resource values.

6. Road Closure -- All access roads not required for maintenance shall be permanently closed using the most effective and least damaging methods appropriated to that area with concurrence of the landowner.

7. Tower Placement -- Special tower placement may be used to minimize ground disturbance.

8. Pre-construction Survey Team -- A biologist shall be assigned to the pre-construction survey team responsible for ensuring that access routes, spur roads, and tower sites are placed in a manner that will affect as few tortoise burrows as possible. Potential work areas will be flagged several days prior to construction.

9. Storage of Equipment and Material -- Overnight parking and storage of equipment and material shall be in a previously disturbed area designated by the pre-construction survey team. This could include batch sites, pulling sites, and tower sites.

10. Limit Activity to Flagged Area -- Construction and maintenance workers shall limit their activities and vehicles to flagged areas. No cross-country driving is permitted.

11. Spur Roads -- To the extent possible, blading will not be done on spur roads, nor at towers, splicing and tensioning sites.

12. Removing Tortoises -- During March through May tortoises will be removed within 30 days from any burrows in flagged work areas. During the remainder of the year they will be removed within 45 days. They will be removed by hand when temperatures are below 95 degrees Fahrenheit. All burrows located in disturbance areas will be collapsed to prevent reentry.

13. Relocation of Removed Tortoises -- Excavated tortoises shall be relocated to an unoccupied natural burrow of similar size, shape and orientation as the burrow in which it was located. If a suitable unoccupied burrow is not found, an artificial burrow will be excavated by a qualified biologist using the TORT-Group method. Artificial burrows will be located within 600 feet of the original burrow.

14. Tortoises Found in Construction Zone -- Construction personnel shall report any sighting of tortoises in the construction zone to the biologist. They will be moved 100 yards into undisturbed habitat.

15. Raven Attractions -- Trash and food items shall be removed daily by the construction workers and placed in raven-proof containers.

16. Firearms -- Firearms shall be prohibited on all construction and maintenance sites.

17. Vehicle Speed Limit -- Construction and maintenance vehicles will not exceed a speed of 25 miles per hour in tortoise habitat.

18. Work Area Inspection -- Work areas shall be inspected for tortoises within 48 hours of

the onset of construction at any stage. Burrow inspection and excavation may begin no more than seven days in advance of construction activity.

19. Closure of Roads after Construction -- Closed routes shall be implemented by barricading, scarifying, and recontouring.

20 Report -- No later than 90 days after completion of construction, the contact representative and on-site biologist shall prepare a report for USFWS, BLM and State wildlife agencies. It shall document effectiveness of mitigation measures, number of tortoises excavated, and number of tortoises moved and compensation for lost habitat.

APPENDIX A.2
LOCAL JURISDICTION COMPLIANCE STANDARDS

Mitigation for New Projects

1. Commercial Harvest of Plant Products

Permits are required to remove certain native plants from private property, including Joshua trees and cactus. Removals usually are allowed without mitigation on small parcels. Such ordinances do not apply to federal or state listed species.

2. Public Roads

Local streets and highways must conform to the transportation element of the general plan and requirements of the local subdivision ordinance. The transportation or highway element addresses location and capacity of future primary highways and collector streets. The subdivision ordinance addresses standards and design of local streets serving the development. The developer of new subdivisions is responsible for local streets within the project.

The county or city is the project proponent for road and highway construction and maintenance projects and must comply with FESA and CESA through the CEQA process.

3. Motorized Vehicle Use off of Public Roads

Unauthorized off road motorized vehicle activity is normally treated as a public nuisance (code violation) because of dust and noise. Organized motorized vehicle events require temporary permits which trigger CEQA review and a survey to determine if sensitive habitat would be affected.

4. Hunting and Shooting

The discharge of fire arms is not permitted within city limits. Most unincorporated areas of counties are open to hunting and shooting; conditions for firearm discharge are set by ordinance.

5. Vehicle-based Camping

Overnight camping on private property is not prohibited by ordinance in cities. However, camping or living in trailers and camper residence is prohibited. Overnight camping on private property is prohibited by County ordinance.

6. Utility Transmission

Normally, construction permits for utility development are handled by the California Public Utilities Commission or California Energy Commission (CEC). In those instances where county permits are required, the portion of the project which crosses private land is usually included within the scope of the FESA Section 7 consultation for the adjoining federal lands.

7. Mineral Exploration and Development

Management of surface activities associated with development of mineral resources on private lands is governed by California's Surface Mining and Reclamation Act (SMARA) (Cal. Pub. Res. Code §2710 et seq). Under SMARA, cities may permit mining activities after CEQA review and approval of reclamation plans.

8. Cattle/ Horse Grazing

General agriculture and the raising of livestock is permitted in appropriate zones. The number of animals permitted is usually related to lot size.

9. Sheep Grazing

General agriculture and the raising of livestock is permitted in appropriate zones. The number of animals permitted is usually related to lot size. Many jurisdictions permit ephemeral sheep grazing on private lands; this is at the discretion of the landowner.

10. Residential, Commercial, Industrial

Each development project is treated on a case-by-case basis with FESA Section 10(a) permits required from USFWS, and CESA section 2081 authorizations required from CDFG, if listed species are found on the site.

11. Refuse Disposal

The collection and disposal of solid waste materials is provided either directly by local government or indirectly by contract. Cities require that individual trash containers have lids.

Summary of Current Conservation Management in Cities

CURRENT CONSERVATION POLICY AND PRACTICE	ADELANTO	APPLE VALLEY	BARSTOW	CALIF CITY	HISPERIA	LANCASTER	PALMDALE	RIDGECREST	29 PALMS	VICTORVILLE	YUCCA VALLEY
1. Adopted conservation element to the general plan.	X	X	X		X	X	X	X	X	X	X
2. Conservation element includes a biological component.	X	X	X		X	X	X	X	X	X	X
3. Special area set aside and managed to conserve biological resources.						X		X			X
4. Require development fee for acquisition of private lands for conservation of biological resources.											X
5. May require on-site dedication or easement in a new project for habitat conservation.		X			X	X	X				X
6. Residential zoning for large lots 2.5 acres or greater.	X	X		X	X	X	X	X	X	X	X
7. Zoning or public nuisance ordinance used to control unauthorized OHV activity.			X		X	X	X	X	X	X	X
8. Vehicle based camping prohibited ordinance.			X			X	X	X	X	X	
9. Hunting and shooting prohibited by ordinance.		X	X	X	X	X	X	X	X	X	[1]
10. Dog leash ordinance in effect.	X	X	X	X	X	X	X	X	X	X	X
11. Require that waste disposal facilities be covered to reduce scavenging.	X	X	X		X	X	X	X	X	X	X
12. Require project proponent to survey proposed development site for presence of desert tortoise.	X	X	X		X	X		X	X	X	X
13. Number of FESA Section 10a/2081 authorizations approved for incidental take of desert tortoise.	0	0	1[2]		0	0	0	0	0	1	1
14. Amount of time that it took to complete 10a/2081 process (months).			18							36	18
15. Local ordinance to promote conservation of native plants.	X	X			X	X	X	X	X	X	X

[1] Hunting and shooting with shotgun only.

[2] Joint FESA Section 7 Consultation in lieu of 10a permit.

APPENDIX A.3
MEASURES TAKEN BY INDUSTRY AND GOVERNMENT TO MITIGATE TAKE WITHIN THE WEST MOJAVE PLANNING AREA

This appendix describes methods and locations used by government and industry during the last decade to mitigate significant projects undertaken in the West Mojave planning area. It is organized by the jurisdiction in which the project occurred. Said jurisdiction was in most cases (but not always) the lead permitting agency for the project. The discussion primarily involves compensation for lost habitat on project sites by the purchase of off-site mitigation and compensation lands.

This Appendix also incorporates by reference Appendix J of the document titled *Federal Biological Opinion Analysis for the Proposed Eagle Mountain Landfill Project* (copy on file at the West Mojave planning team office, Barstow). This document includes a summary of federal and state biological opinions and mitigation requirements for major projects within the planning areas which were proposed subsequent to the listing of the tortoise and the mohave ground squirrel. Most of those projects that resulted in off-site compensation lands are summarized below.

Mitigation and compensation has been required throughout the planning area to ensure compliance with the Desert Plan, to mitigate impacts identified in NEPA and CEQA documents, to implement the requirements of city and county general plans and development codes, and as a result of consultations involving the USFWS and the CDFG. It is not the intent of this appendix to document all mitigation implemented over the years for the multitude of projects that have performed the basic requirements of tortoise removal, habitat monitoring, revegetation, and project re-design. Rather, this chapter presents a representative sampling of mitigation and compensation required in a variety of locations for a number of major projects.

The primary species prompting the creation of land banks and conservation easements are the desert tortoise, Mohave ground squirrel, and certain plants (mostly limestone endemics) listed as rare or endangered by USFWS and/or CDFG at the time of project application or development. The major parcels and locations have been mapped and incorporated into the West Mojave geographical information system data base. On-site mitigation, acreage, compensation ratios, costs, ownership, and management information are furnished where available. Information for this section has been obtained via phone conversations or written communications with local government staff and industry representatives, and from review of information previously submitted.

A.3.1 Inyo County

Inyo County is not normally involved in the establishment of conservation easements or mitigation banks. Only about two percent of the County's land base is private land. Most projects on private land involve CDFG authority. Development within Homewood Canyon on or near habitat of the Inyo California Towhee involves cooperative agreements with China Lake Naval Air Weapons Center and BLM.

Truck Stop on Hwy 395 (Rose Valley area): This truck stop approval resulted in mitigation for the Mohave ground squirrel consisting of the purchase of 80 acres approximately one mile east of Highway 395 on Coso Station Road and ½ mile south of Coso Road. Ownership was transferred to BLM and site fencing was required of the applicant.

A.3.2 Kern County

American Honda Testing Facility: This project's mitigation was negotiated with the Desert Tortoise Preserve Council and CDFG. BLM was not a participant until fairly recently. The original intent was a 5:1 compensation for mitigation property. However the applicant had difficulty finding appropriate properties, which at that time were being sought within the DTNA. BLM was purchasing parcels within the DTNA and did not want competition inflating land values. As alternative mitigation, American Honda created a study site in Section 8 of the DTNA which is adjacent to Section 6, the site of the testing facility. An irrigation system was installed on ½ of Section 8, supplied by water from Honda's well on Section 6. Irrigation took place over a period of time. Section 8 was also used for tortoise monitoring and for relocating tortoises from the project site. Under its current agreement with BLM, Honda would supply water from its well if BLM decided to resume irrigation.

Rand Mining Company Project: This mine approval resulted in an agreement to purchase and transfer a specific parcel, located east of Hwy 395 (east of Atolia), to CDFG. Subsequent analysis indicated that the subject parcel was not suitable for the intended compensation. Another parcel north of Highway 58 and east of Highway 395 is under consideration for transfer to CDFG (and may, at this writing, have been transferred).

Ephemeral Sheep Grazing: A 1991 Biological Opinion on sheep grazing restricted this land use to Category III desert tortoise habitat (and then only under certain forage conditions), resulting in a 66% loss of available rangeland from that authorized under the Desert Plan. This restraint on grazing in combination with recent dry seasons has resulted in the elimination of sheep grazing from public lands in the planning area.

A.3.3 Los Angeles County

Due to the slow growth rate in the unincorporated desert portion of Los Angeles County, there have been few if any conservation easements, development right transfers, or mitigation banks formed. Mitigation is usually performed on a project site, with little need for off-sets or compensation. Biological surveys are performed, normally showing little if any evidence of tortoise, even in the unincorporated County area west of Palmdale, with little if any mitigation. The Lancaster landfill expansion involved no tortoise habitat, however revegetation was required. Mining west of Big Rock required reclamation only, with no signs of any of the species in question. While there is evidence of tortoise in the northeast sector of the County, few projects are processed in that area. There have been some recent projects south of Lake Los Angeles, with Mohave ground squirrel and desert tortoise surveys performed. The only mitigation required was open space designation on site. It is likely that intense agriculture during mid century has diluted habitat quality over much of the desert portion of Los Angeles County.

A.3.4 San Bernardino County

Black Angel Mine: A mining consultant's firm purchased 80 acres in the Fremont Mountain area (N ½ of SW 1/4 Sec. 5 T 32 S, R 42 E in San Bernardino County). This parcel has already been deeded to BLM, to be used for project mitigation credits. Approval of this aggregate mine in the mid 1990's resulted in the 'consumption' of 65 acres of this 80 acre parcel at a 1:1 ratio, primarily to compensate for right-of-way impacts, etc. The banked land cost $35,000 and fencing on the project site cost an additional $25,000.

Cady Mountain/Cronese Lake Grazing Allotment: The July 13, 1993 Biological Opinion reduced the stocking rate by 2/3, from 1508 to 500 AUMs; in addition to imposing a variety of operational constraints.

County of San Bernardino, Department of Transportation: The County Department of Transportation is in a constant process of tortoise mitigation via its permits for borrow and mixing sites, road improvements, shoulder work, etc. The most notable road mitigation consisted of installing tortoise fencing along both sides of the then newly constructed division of Fort Irwin Road between 1994 and 1996. No monitoring data is available to make a determination of effectiveness.

County of San Bernardino, Waste System Division: In 1991, the County Waste System Division purchased 6 sections (3840 acres) of railroad land in Category I desert tortoise habitat, located 16 miles east of Highway 395 and 10 miles north of Harper Lake (Sections 17, 19, 21, 29, 31 and 33 - T 31 N, R 44 E). Purchase price was $1,600,000. The site is known as the **Black Mountain Mitigation Bank**.

The intent was to bank tortoise habitat as offsets for potential new landfill sites and for expanded operations at existing sites. No 'credit' has yet to be taken within these six sections. However negotiations are underway with CDFG and USFWS to use two of these sections to compensate for expansions of a number of landfill sites throughout San Bernardino County, including Victorville and Barstow. Title would be transferred to BLM when transactions are complete. If all six sections are not needed for future compensation by the Waste System Division, they could be made available to mitigate other County public works projects.

Cushenbury Sand and Gravel: 123 acres of marginal tortoise habitat was proposed to be disturbed by a sand and gravel plant site immediately south of Highway 18 on the north flank of the San Bernardino Mountains. The mitigation ratio was 1:1 so 123 acres were mitigated. Purchase was from a private party and dedicated in fee to CDFG (see CDFG map). The area is located on the south side of the Rodman Mountain area, outside of the Johnson Valley OHV open area (T7N R3E Sec. 25 north half). The mitigation parcel was split into a 123 acre parcel, with a remainder parcel of 5.17 acres.

Parish's daisy/Alkali mariposa lily: A 43 acre site on the southeast corner of the facility (Highway 18 and Camprock Road) was established as a conservation easement.

Fort Cady Minerals Corporation: A permit to expand borate production in 1996 resulted in the purchase of 348 acres of tortoise habitat between Fremont Peak and the Mud Hills in Sections 25, 26 and 36 (R5E, T8N); the land was deeded to the BLM. The cost was $141,000 at a compensation ratio of 1:1. Mitigation was via USFWS consultation.

Kerr McGee Chemical Corp (ACE Co-Generation-Argus): This 1988 project resulted in the Desert Tortoise Preserve Committee acquiring 80 acres within the DTNA at a cost of $25,000.

Mitsubishi Cement: As compensation for a 35 acre expansion of the main quarry behind the plant, approved in 1997, 35 acres will be set aside as a conservation easement at a ratio of 1:1. Plants include the Parish's daisy, Cushenbury milkvetch, Cushenbury buckwheat and Cushenbury oxytheca. (Same agreement as that involving Specialty Minerals, below.) The application was processed without an EIR; CDFG wanted a 2:1 ratio or the requirement for an EIR. It was processed through consultation with USFWS. Cost approx. $2000/acre. The project is currently in litigation.

Mueller/Turner Subdivision: This subdivision in the Pioneertown area included a 50 acre, recorded non-buildable easement. This easement was dedicated on the parcel map, and was primarily designed for open space. Although the easement is located at 4000 feet elevation, it may affect marginal tortoise habitat.

North American Chemical Corporation (formerly Kerr McGee) - ACE Expansion: The Argus co-generation expansion resulted in the purchase of approximately 365 acres of Mohave ground squirrel habitat (with tortoise benefit) in Kern County, 5 miles east of the DTNA (Parcels 25-30 - T 30 S, R 39 E, Sec. 36).

North Joshua Tree Project: A 50 to 60 acre 'non build-able' parcel was set aside for a project approved in the community.

Ord Mountain Grazing Allotment: Ninety-eight AUM's (animal unit months for cattle) were surrendered for Bighorn sheep in the Newberry and Ord Mountain ranges in 1981 via BLM permit. In addition, ephemeral sheep grazing was curtailed a number of years ago east of Highway 247 (east of Stoddard Valley) because of bighorn sheep issues.

A 1995 and 1996 Biological Opinion required a reduction of perennial key species utilization from 60% to 40% within tortoise habitat. Grazing preference is based on perennial vegetation. Thus, the order effectively reduced the number of cattle on the range at any given time. A Full Force and Effect decision also required strict herd management, especially in the western portion of the allotment.

The Biological Opinions also resulted in a lower threshhold for ephemeral cattle grazing in tortoise habitat, requiring a presence of 350 lbs./acre dry weight before turnout vs. 200 lbs./acre prior to the Biological Opinions. This could reduce the opportunities for periodic ephemeral cattle grazing.

The Biological Opinions also placed restrictions on construction and re-construction of range improvements within tortoise habitat. Informal USFWS consultation is also required prior to implementing new range projects that were not listed in the formal consultation proposal.

The above restrictions on federal land in turn diluted grazing options on the inter-mixed private inholdings, including fee-simple properties.

Rattlesnake Allotment: The extreme northern portion of the allotment is within tortoise habitat and has been affected with measures similar to those described above, but with a requirement of 200 lbs/acre dry weight.

Pilot Knob Grazing Allotment: Recent purchase of about 1360 acres of private inholdings within this emphemeral/seasonal cattle/sheep allotment by the Desert Tortoise Preserve Committee and the Wildlands Conservancy (approximate cost: $100,000) has resulted in a current cessation of grazing on the allotment (constituting 48,000 acres of private and BLM critical habitat). This allotment is still categorized as active, however BLM's future preferred action is 'closure.' These actions are not complete to date.

Pleuss-Staufer (California) Incorporated: Mule deer mitigation was performed south of several limestone quarries in the San Bernardino National Forest, as required by the United States Forest Service. $75,000 was paid from 1988 to 1995 to study mule deer habitat. This area is immediately south of the planning area's south boundary.

Mitigation was implemented on site at the White Knob limestone quarry to propagate Cushenbury buckwheat, parish's daisy and other endangered species to compensate for lost habitat. This involved a $20,000 cost over a period from 1988 to 1994, stemming from a County permit.

Rheox Inc. - Hector Mine expansion: This 1992 mine expansion resulted in the purchase of 338 acres of tortoise habitat within the same general location as the Fort Cady mitigation (8N R5E). This land was also deeded to BLM. The cost was approximately $300,000 at a compensation ratio of 1.95:1. This was renegotiated from an originally proposed 4:1 ratio. Seven miles of fencing was installed around the mine and tortoises relocated off-site. Both federal and state consultations were involved.

Radio Frequency Test Station: In the early to mid 1980's, an approximately 5-acre site was set aside on the applicant's property near Helendale as a conservation easement for creosote clones as mitigation for grading impacts.

Rail Cycle Landfill (Proposed): If a landfill at Amboy is developed, three sections will be purchased (one in Cadiz Valley, one in Paiute Valley and one in Fenner area). These would be private lands purchased and deeded to BLM at a 2:1 exchange ratio for tortoise mitigation.

Santa Fe Mine: This mid 1980's mining project in the center of the Newberry Mountain range installed a conveyor belt from its quarry to a processing plant just north of I-40. The purpose was to eliminate quarry truck traffic that likely would have negated or diluted the viability of golden eagle nesting within outcrops adjacent to the quarry and road. The firm also paid for a sheep guzzler in the Newberry range, installed by the Society for Conservation of Big Horn Sheep. A maintenance agreement was included in the project mitigation.

Service Rock Sand and Gravel: Service Rock received 180 acres of BLM land for its mine expansion in east Barstow, between the mine and the Barstow Marine Base. In exchange, Service Rock purchased three sections from Catellus Land Development Corporation, located in the Opal Mountain area (Sections 9,15,17), and has transferred this land to BLM. The approximate 8:1 exchange ratio is due to quality of habitat and land values.

Specialty Minerals (Cushenbury Mine Trust and Arctic Quarries): This is a quarry expansion on an 81 acre site south and east of the quarry, involving limestone endemics. A mitigation bank was formed, allowing Specialty Minerals to recover 2 out of 3 acres for mining based on revegetation success. The result will be either 81 acres of protected habitat, or somewhat less acreage in the bank but with the mining site revegetated.

US Borax/Westinghouse (Mojave) Co-generation Project: This 1989 project resulted in the purchase of 38 acres of tortoise habitat within the DTNA, acquired by the Desert Tortoise Preserve Committee. Acquisition, management and endowment funds amounted to $98,334.

Yeager Wild Wash Sand and Gravel: A recent habitat conservation plan was prepared for this mine. An incidental take permit has been issued by the Fish and Wildlife Service, which required that 35 acres of compensation land be deeded to BLM.

A.3.5 Adelanto

Within the past seven years, no mitigation has been required for a project on or off site, not even for an LADWP switching station. The City performs tortoise surveys and has had numerous dialogs with USFWS staff. Tortoises were not located on recent residential tract sites, but CDFG still requested a land exchange, eventually altering its position. No off site compensation was required or established.

A.3.6 Apple Valley

Most development has consisted of a commercial project on Highway 18 (ie: Walmart) and residential in-fill. A 70-acre lot tract map, the first in six years, has recently been approved. A habitat conservation plan was completed for a proposed 160 acre residential project in the late 1980s in the north portion of the Town; however, no incidental take permit was issued. Compensation would have required a 212 acre mitigation parcel, at a ratio of 1:1.3. With few major projects since incorporation, the marginal habitat that remains within the Town proper has not been significantly disturbed. There are few if any conservation easements within the Town, no development right transfers, off-site

mitigation banking, etc. Future development planned at the Airport Industrial Park (northeast of the Town center), where some viable habitat remains, will likely require some level of future mitigation.

A.3.7 Barstow

Barstow College Expansion and Veterans Home Administration Construction: These two (circa 1995) projects at the south end of the City resulted in the purchase of 57 acres (with five acres of desert wash habitat) of compensation land within the DTNA, acquired and managed by the Desert Tortoise Preserve Committee. The cost was $56,800.

Lenwood Road Projects: The Lenwood Road projects were approved with a Memorandum of Understanding. The section 7 process has worked best for the City. Applicants paid $3500 in fees in addition to regular CDFG filing fees. The City and applicants had a choice of tortoise fencing or performing a site survey, and chose to survey (approximate cost: $25,000). Temporary deflection fences were also installed near rights of way. No off-site mitigation or banking was required. In addition, Lenwood Loop Connector (Outlet Mall Road) required compensation and mitigation.

Both the Barstow College Expansion Project and Lenwood Road Projects were overseen by state agencies. The City had no jurisdiction.

Sun Valley Project: A 1990 habitat conservation plan was drafted for this 1,348 acre project. No incidental take permit was issued.

A.3.8 California City

Development within the City has been slow over the past few years, although there has been some new housing and some small businesses. Some level of mitigation for a pending prison project may be required. No compensation parcels or conservation easements have been set aside. The City's 'Conservation Land' zoning can be developed at a relatively light density, but all projects will require 'full EIRs' and therefore will be mitigated accordingly.

A.3.9 Hesperia

Numerous surveys for tortoise and Mohave ground squirrel have all proven negative. Therefore there has been no mitigation for desert tortoise or Mohave ground squirrel. No tortoise or Mohave ground squirrel were found on the Summit Valley (Las Flores Ranch) parcels. This primarily residential project mitigated for vireo, flycatcher, bald eagles, etc. within the project property. Most habitat involving species being studied by the West Mojave planning process will remain on the portion of the Las Flores Ranch within Summit Valley proper which won't be developed for residential, and area which will remain a horse ranch. Most environmental issues in Hesperia historically have revolved around lot size, protection of juniper woodland, and open space.

A.3.10 Lancaster

The City is actively seeking industry and employment more than residential development. Very little desert tortoise or Mohave ground squirrel presence is indicated in surveys and therefore not heavily mitigated. The City is attempting to preserve desert woodland (Joshua tree/juniper associations). A recent project had a 1:1 set- aside. The City acquired about 50 acres and changed its zoning to Prime Desert Woodland. The City is also considering the purchase of another 30 acres for a total of 80 acres targeted. A CDFG 2081 authorization was involved. The site will be used for recreation and open space; it will be fenced and pathways will be installed. Fifty percent of the site must be set aside for open space. The site is not committed to the protection of any particular faunal species.

A.3.11 Palmdale

Desert tortoise and Mohave ground squirrel studies were performed in the northeast portion of the City in 1990. 1950's agriculture has disrupted most of the vacant land within City boundaries. Very little native habitat remains, except possibly for raptors and other birds. Very few projects have been proposed recently due to the slow economy. Most current projects are residential in-fills within tracts previously approved in the 1980's. The City does not require mitigation fees, compensation, off-site mitigation or development transfers because of the diluted value of its habitat.

A.3.12 Ridgecrest

The City, working with CDFG, purchased 500+ acres in Sand Canyon in Kern County (eastern slopes of Sierras),a high quality riparian area with surrounding watershed. The intent was to off-set future loss of habitat within City boundaries. Developers within the City are to reimburse the City at a 1:1 ratio. Not enough development has occurred to consume much of this 'bank', with less than 10 acres committed to date. The ultimate status of this 'bank' is questionable at the present due to its minimal use. The City is only averaging four new housing starts per year. Developers pay upon receipt of development permits, not at the initial approval stage.

A.3.13 Twentynine Palms

City boundaries include pockets of tortoise habitat and tortoises. The City requires developers to provide a biological study for projects on sites that may include sensitive biological resources. Most development is occurring on previously disturbed in-fill urbanized areas, although little has occurred since incorporation in the early 1990's.

Rodeo Arena: Forty acres of a 320 acre site within tortoise habitat were graded for a rodeo arena. Consultation and mitigation through the Department of the Army, Corps of Engineers (which was involved due to the presence of a mapped “blue line” stream) resulted in a 1:1 compensation ratio. As of this writing, a 40-acre compensation parcel has yet to be committed. Tortoises were moved off the project site prior to grading.

A.3.14 Victorville

Victorville has mitigated two projects by means of a incidental take permits through CDFG and USFWS agreements. There is no significant desert tortoise presence within City limits, no preserves or easements established. The Mojave River riparian habitat is a bigger issue. (See also Mojave Water Agency-groundwater adjudication mitigation, below).

Southdown Inc. - Victorville Cement Plant: Southdown has received approval for a 900-acre industrial park north of the I-15 bridge over the Mojave River and east of National Trails Highway (old Highway 66). Portions of the park containing significant cultural resources have been deeded to a conservancy for protection. Future loss of tortoise habitat on site has been mitigated by a $600,000 payment to CDFG to purchase tortoise habitat acreage wherever the agency chooses. CDFG will receive the funds as industrial development evolves.

Sunland Communities: This west Victorville project resulted in 320 acres of compensation lands purchased off-site in the southern portion of Superior Valley (south half of section 23, T31S, R45E) at a cost of $168,000. Processing was by a federal incidental take permit at a 2:1 ratio. The mitigation included the payment of $27,840 in fees to CDFG for long-term management.

A.3.15 Yucca Valley

The Town incorporated in 1991 during the regional economic recession. No significant development has occurred since. Occasional biological surveys are required, but not on sites adjacent to Highway 62 where most development (primarily commercial) occurs. There has been no major development in the more rural areas of the Town, therefore little infringement on remaining habitat. There have been very few consultations, land banking, etc.

Onaga Elementary School: This school (approved by the California Department of Education) was issued a 1993 biological opinion that required the school district to complete a "desert education program" for students in lieu of compensation fees. It also resulted in the establishment of a seven acre conservation easement adjacent to the school site.

Valley Community Chapel/Good Shepherd Lutheran Church: These two projects in or around 1993 required a five acre compensation parcel, resulting in the issuance of California's first 10(a) incidental take permit. This land was acquired within the DTNA and is managed by the Desert Tortoise Preserve Committee. Total cost was about $9,150, which included $1,500 for long-term maintenance.

A.3.16 Mojave Water Agency

Morongo Pipeline (Hesperia to Morongo): Most of the 290-acres of disturbance was reseeded at an approximate cost of $800/acre ($200,000). Seed and germination enhancers constituted half the cost. The swath was ripped, seeded, fertilized and imprinted.

Off-site tortoise compensation consists of 290-acres purchased by BLM in Rainbow Basin ACEC (Barstow Field Office) at an approximate 1:1 exchange.

Mojave Pipeline (Oak Hills to Barstow): Off-site compensation for this in progress pipeline is the purchase of 360 acres for approximately $200,000. The Agency bought into an existing mitigation bank of 1360 acres set aside for desert tortoise and Mohave ground squirrel mitigation (private property recently purchased by the Desert Tortoise Preserve Committee and the Wildlands Conservancy within the Pilot Knob ephemeral grazing allotment).

Mojave River Basin Groundwater Adjudication: The City of Barstow's litigation against upstream pumpers resulted in this adjudication. The Basin and most of the Mojave River watershed are within the planning area boundaries. The adjudication's 1993 stipulated judgement and 1996 'Judgement after Trial' required an administration fee from pumpers producing more than 10 acre feet/year. $.50/acre foot/year (adjusted to CPI), is deposited into a trust fund for use by CDFG to maintain an adequate water supply for Mojave River riparian habitats from the Mojave Narrows to Camp Cady, some of which could become depleted due to groundwater overdrafts. (Said funds are not to be used at Afton Canyon which is outside the adjudication's boundaries as identified in the judgement).

CDFG is obligated to use up to $100,000 from the fund to produce a management plan, limited to the planning of facilities and methods necessary to maintain water supplies for the Mojave River's more critical riparian habitats. The fund's current balance is approximately $250,000. Its ceiling of $1 million, to be adjusted for the Consumers Price Index, will be maintained by fees as necessary to cover any facilities constructed or water purchased to achieve the fund's goals. The Riverside County Superior Court that issued the judgement has some oversight authority on the CDFG's use of these funds.

A.3.17 Indian Wells Valley Water District

A 1993 mitigation for a storage facility on a three-acre site originally required a 3:1 compensation. The District acquired 120 acres (NW 1/4 and S ½ of the NW 1/4 of Sec. 19 T27 S, R 39 E). (CDFG and USFWS do not want to accept this land until the West Mojave Plan is completed.) The District recently completed the biological portion of its general plan, which will help to streamline the permitting process and biological surveys.

A.3.18 Joshua Basin County Water District

To avoid tortoise impacts that could have been caused by a 1997 pipeline project (and to avoid the need for a Section 404 permit from the Department of the Army, Corps of Engineers), the District chose to realign two to three miles of the proposed route.

Copper Mountain Mesa Pipeline: This 1996 project was mitigated by the District's purchase of lands within its 640 acre mitigation bank south of Fremont Peak. About 500 acres remain in this parcel to absorb future District project mitigation needs.

A.3.19 California Energy Commission

The California Energy Commission sent a 'mitigation' map to the BLM in 1992. It primarily focused on tortoise compensation for the LUZ solar energy project's Kramer Junction and Harper Dry Lake sites.

LUZ (Northeast Kramer): The project has declared bankruptcy. Prior to this, mitigation had been developed with five sections of land to be transferred to the 'State'. It involved a complex mix of mitigation credits.

Highway 395 Transmission Line: About $210,000 was paid to fund habitat conservation.

A.3.20 California Department of Transportation

The California Department of Transportation (Caltrans), District 9, is performing most of the property and mitigation acquisition for Caltrans within the planning area, usually through interagency agreements with CDFG prepared pursuant to a programmatic plan. The procedure usually involves a payment to BLM, which in turn purchases and maintains the mitigation properties.

Both sides of about 18 miles of California state highway 58 has been fenced, at a cost of over $1,000,000. The fences appear effective, although they are difficult to maintain. Fencing will also be utilized at the interchange of Interstate 15 and California state highway 58 (in Barstow) and on Interstate 15 from Lenwood to Barstow. Portions of California state highway 14 have also been fenced.

Recent work on California state highway 58 and Interstate 15 and 40 in the Barstow area has resulted in the acquisition of about 2,260 acres under a memorandum of agreement. Other projects involving Interstate 15 have resulted in the purchase of 1,800 to 2,000 acres. Caltrans paid BLM $29,000 to acquire properties to mitigate impacts from a pending passing land project on United States highway 395.

The California Transportation Commission's 1992 Environmental Mitigation and Enhancement Fund Award was awarded to the DTPC, which in turn purchased 647 acres of tortoise habitat between the DTNA and the Randsburg-Mojave Road. Acquisition and transaction funding amounted to $400,000.

A.3.21 Bureau of Land Management

BLM administers lands acquired and managed as compensation for project impacts on private and BLM land.

The following list of BLM-permitted projects within the planning area is presented as an overview (only). These projects were mitigated by compensating land purchases. (Some projects requiring both

a county and a BLM permit are addressed above by the preceding county discussions.) More detailed information is included in Appendix J to the document titled *Federal Biological Opinion Analysis for the Proposed Eagle Mountain Landfill Project*.

Name	Location	Date of Biological Opinion
A T&T Fiber Optic Line	Kern County to Victorville	1993
Baltic Project	Kern County	1992
Contel Fiber Optic	Inyo County Kern County	1991
CSA 70 Right of Way	San Bernardino County	1990
Drill 14 Test Holes	San Bernardino County	1991
Fort Cady Mine Plan	San Bernardino County	1992
Hector Mine Expansion	San Bernardino County	1991
Indian Wells Right of Way	Kern County	1992
Landfill (borrow)	Victorville	1994
Lenwood Loop Connector	Barstow	1993
LUZ Solar Plant (Harper Dry Lake)	San Bernardino County	1989
Mead-Adelanto Transmission Line	San Bernardino County	1991
New Owl Rock Exchange	Los Angeles County San Bernardino County	1992
Owl Rock Exchange	Los Angeles County San Bernardino County	1994
Rand Mountain Mining Expansion	Kern County	1993
Small Mine Projects	Throughout Planning Area	1992
Southern California Gas Pipeline	Los Angeles County San Bernardino County	1990
U. S. Borax Mine Plan	San Bernardino County	1991
Water and Electric Right of Ways	San Bernardino County	1992
Yellow Aster Expansion	Kern County	1991

A.3.22 United States Fish and Wildlife Service

USFWS does not hold mitigation property, and therefore no lands have been acquired. Mitigation properties are held by BLM, the National Park Service or the CDFG.

A.3.23 Department of the Army, Corps of Engineers

The largest open space property held by the Corps of Engineers is its Mojave Forks property, which it sublets to San Bernardino County Regional Parks and to a campground concessionaire.

The Corps of Engineers permitted the Twentynine Palms fairgrounds project which). It required similar mitigation for a permitted workplace project on the Mojave river (Southdown) in Victorville (1994 biological opinion).

A.3.24 China Lakes Naval Weapons Center

Coso Geothermal: There have been no compensation or easements. An exclosure for grazing was required. This was for Mohave ground squirrel and was part of a comprehensive study.

A.3.25 Edwards Air Force Base

Electrical and water lines were mitigated by compensating land purchases (1991 biological opinion).

A.3.26 Federal Energy Regulatory Commission

The Mojave - Kern River natural gas pipeline was mitigated by compensating land purchases (1990 biological opinion).

A.3.27 Private Environmental Groups

The Desert Tortoise Preserve Committee: The Desert Tortoise Preserve Committee (DTPC) is a nonprofit group dedicated to management of lands and public education on behalf of the desert tortoise. Together with the BLM, the DTPC manages the 35-square mile Desert Tortoise Natural Research Area (DTNA) for the tortoise and other biological resources. Annual programs include a naturalist program at the DTNA to teach the public about the plight of the tortoise; fencing program, which has resulted in a complete perimeter fence around the area; funded studies to determine the advantages and disadvantages of fencing and managing the site; and monitoring of tortoise densities inside the DTNA. The DTPC is also working with the BLM to manage and protect tortoise habitat on the 44,000-acre Pilot Knob Allotment, which they and the Wildlands Conservancy recently secured by purchase of the remaining private in-holdings within the allotment. Smaller parcels in the Ivanpah Valley and elsewhere in tortoise habitat are also owned by the DTPC.

The Wildlands Conservancy: The Wildlands Conservancy owns properties within the planning area located at its extreme southeast portion, between the San Bernardino National Forest and Joshua Tree National Park; consisting of approximately 20,000-acres.

The Nature Conservancy: The Nature Conservancy formerly held properties within the DTNA,

which have since been transferred to BLM and CDFG. It has also transferred its properties in the Morongo Reserve to BLM and to the San Bernardino County Regional Parks Department. The only preserve it presently owns and manages within the planning area is a 40-acre parcel near Pearblossom, on the edge of both the Angeles National Forest and the Devil's Punchbowl County Park. This parcel within Joshua Tree/Juniper Woodland is committed to habitat protection.

APPENDIX B
BLM GENERAL LAND USE MANAGEMENT

1. Commercial Harvest of Plant Products

Policy -- The CDCA Plan allows vegetation to be removed for commercial purposes only after NEPA requirements are met and necessary stipulations have been developed. (Desert Plan, Multiple Use Class Guideline 10.)

Implementation -- Neither of the two BLM field offices which administer the great majority of public lands in the planning area (the Barstow and Ridgecrest Field Offices) have active plant harvest and plant sale programs. The Ridgecrest Field Office did have a sale of creosote stems up to 1989; at that time a severe drought forced the cancellation of vegetation sales. No requests for creosote stems have been received since that time. Accordingly, no EAs or EISs have been prepared for such uses, and there have been no section 7 consultations.

2. Public Roads

Implementation -- Public road construction projects are currently addressed by project-specific FESA Section 7 consultations. A programmatic biological opinion has been approved for routine highway maintenance activities by the California Department of Transportation. The opinion applies to state highways and freeways in Riverside and San Bernardino Counties except for Highway 62. The term "activities" encompasses routine maintenance and highway repair, including limited scale road widening. [Mitigation measures are the same as those listed in Appendix A for this type of activity.]

3. Motorized Vehicle Use off of Public Roads

Policy -- -The Desert Plan designated all BLM-administered public lands as either open or closed to vehicle use, or as open on a limited basis. “Responsible” vehicle travel is allowed “anywhere” inside of designated open areas (which are primarily Class I). “Open” areas encompass 370,578 acres; they include Rasor, El Mirage, Johnson Valley, Stoddard Valley, Spangler Hills, Jawbone Canyon, Dove Springs and Olancha Dunes. No OHV travel is allowed within closed areas (primarily MUC C).

Within limited vehicle use areas zoned as MUC M, vehicles are allowed on “existing” routes unless BLM makes a determination that use must be limited further (CDCA 1993 amendment defined existing routes as all routes established before December 31, 1978). In other words, routes remain open unless there is a demonstrated need to close them. A more restrictive approach applies to limited vehicle use areas which bear a Class L designation. Due to “higher levels of resource sensitivity” a route must be “approved” or it will be given priority for closure.

The Desert Plan did not specifically designate a network of approved vehicle routes. Rather, it stated that “BLM will, with assistance from the public, determine which routes in [limited use areas] need to be closed or limited in some other way. ... [Routes] shall be located to minimize harassment of

wildlife or significant disruption of wildlife habitat." The Desert Plan directed that "special attention" be given "to protect endangered or threatened species and their habitats" during the route designation process. Route inventory and route designation is occurring as part of the West Mojave planning process. The Ord Pilot project is a focused attempt to designate routes and formulate a process-formula for the rest of the WMPA. The Ord Pilot Technical Review Team (TRT) is assisting in the process. The TRT is comprised of representatives of the following user groups: industry, grazing, County Transportation Department, and environmental groups.

Implementation -- Motor vehicle use on routes of travel and within open areas is allowed without mitigation, excepting mining claim access and organized recreation events.

A programmatic biological opinion titled *Road Maintenance and Rehabilitation of Disturbed Areas in the Ridgecrest Resource Area* has been approved which applies to routes of travel on BLM-managed public lands in that resource area. The purpose is to establish a program: (a) for the restoration of disturbed areas; (b) for the maintenance of roads and trails; (c) to encourage compliance with a designated route system; and (d) to discourage user attempts to avoid rough or impassable route segments by creating a new route bypass.

4. Recreation Activities

Policy -- Recreational events requiring a permit may be subject to mitigation.

Implementation -- Mitigation measures imposed on event organizers as conditions of federal permits have included restricting travel to existing routes and camping in existing disturbed areas.

Events -- In 1995, BLM authorized ten non-competitive OHV events in the planning area. Over 2,800 persons participated. The number of events and participants increased from 1985 to 1995 due to the growing popularity of dual sport tours.

5. Hunting and Shooting

Hunting is regulated by state law and shooting is regulated by counties. In the Desert Tortoise Natural Area, Fremont Valley and the Rand Mountains, hunting with shotguns for upland game is allowed in the fall and winter. In the DTNA hunting is only allowed in the northern more rugged part of the area. Open Areas have some restrictions as well.

6. Vehicle-based Camping

Overnight camping involving a motorized vehicle is allowed with four exceptions to this general rule: (1) designated wilderness areas (no vehicles are allowed, nor is vehicle-based camping allowed); (2) the DTNA (no vehicle-based camping allowed); (3) the Rand Mountains-Fremont Valley area (camping in designated areas only); and (4) camping restrictions imposed in connection with special management areas, such as Areas of Critical Environmental Concern (see Appendix D). Camping at

a given location is limited to two weeks. Vehicles must be parked within 300 feet of a route of travel.

7. Non-competitive Motorized Vehicle Events

A permit is usually required if the event is over a certain number of vehicles or an entry fee is charged. These events can take place over most of the planning area except for within DTNA and Wilderness areas. A programmatic biological opinion for the BLM California Desert District has been approved for *Dual Sport Events*. It requires that vehicles stay on specified roads, not exceed 30 miles per hour through Category I habitat, and camp overnight only in areas devoid of vegetation and tortoise burrows. The Johnson to Stoddard non-competitive event was authorized through the Ord Mountains. Other general measures are listed in Appendix A.

8. Competitive Motorized Vehicle Events

Policy -- Competitive motorized vehicle events are allowed in designated open areas, and on specified routes of travel outside of open areas (subject to mitigation). These include the Johnson Valley to Parker route, an area outside of the Spangler Open Area and the Stoddard to Johnson Valley Route (on a case-by-case basis, discretionary action). A Barstow to Vegas Route is identified in the Desert Plan, but competitive events have not been approved along it during the 1990s.

Implementation -- Biological opinions have been approved for management plans for four major open OHV areas: El Mirage, Johnson Valley, Stoddard Valley, and Spangler Hills. Mitigation measures for competitive events within these open areas are listed in Appendix A.

Events -- In 1995, the BLM authorized 46 competitive OHV events attended by over 41,750 riders and spectators. The ten year trend shows a slight decrease in the number of riders per event. In the fiscal year 1997, there were 38 events.

9. Temporary Commercial Uses

Bee keeping and commercial filming are permitted.

10. Utility Transmission

Policy -- The Desert Plan designated a regional network of two to five mile wide *utility planning corridors*. New utilities must be located within designated corridors. Local distribution facilities may be located outside of designated corridors.

Implementation -- BLM issues a permit that allows the construction of a new utility in these corridors only after FESA Section 7 consultation with USFWS. Typical mitigation measures normally found in the Service's biological opinion are listed in Appendix A.

Individual programmatic biological opinions have been approved for ongoing maintenance by two pipeline companies (Southern California Gas Company and Four Corners Pipeline), and for minor electrical utility maintenance actions (Southern California Edison Company). The biological opinion subjects these actions, where appropriate, to the same mitigation measures listed in Appendix A which apply to new projects.

11. Electric Power Production

Policy -- Solar energy plants have been constructed at Kramer Junction and near Harper Dry Lake. Wind Farm development is fairly extensive in the Tehachapi/Southern Sierras, primarily on private land, but about 900 acres of BLM land have operational windmills and 1,500 more acres are authorized for wind development.

Implementation -- Mitigation is determined on a case-by-case basis. General mitigation measures listed in Appendix A apply.

12. Mineral Exploration and Development

Policy -- Mineral exploration and development is permitted on all BLM lands except in areas withdrawn from mining. Withdrawn areas include the DTNA and designated wilderness areas. New operations and the expansion of existing operations require the approval of a plan of operation or notice of intent subject to mitigation and compensation. EAs are required on plans but not on notices. Consultation is required for both plans and notices. Mining is allowed on lands acquired for compensation, unless later withdrawn from mineral entry.

Implementation -- A programmatic biological opinion has been approved for mineral exploration and for the operation of mines smaller than ten acres. Operations larger than ten acres are allowed only after FESA Section 7 consultation with USFWS. The Service's biological opinion may include additional mitigation measures.

13. Cattle/ Horse Grazing

Policy -- Biological opinions have been issued for cattle grazing on established allotments on BLM managed lands in the planning area. These biological opinions do not address any species besides the desert tortoise. See Cattle Grazing Table __ in Chapter V, for additional measures required by Biological Opinions.

Implementation -- Actions include exlosures, grazing systems, suspension of grazing, management actions and monitoring. If there are known cattle grazing impacts to riparian areas prescriptions and /or exclosures are planned for alleviating cattle impacts as per BLM's Standards and Guidelines. There are 4 riparian cattle exclosures in the Barstow Resource Area: (1)Afton Canyon ACEC; (2)

Cottonwood Springs; (3) Goat Springs; and, (4) Stone Springs.

There has been $10,000 worth of fencing materials purchased specifically for construction of riparian exclosures.

14. Sheep Grazing

Policy -- Sheep bands are limited to 1,000 adults with lambs, must be loosely grazed and may make only one pass across any given area. Sheep must be watered adjacent to a road or in a previously denuded area. No camp area may be used for more than seven days.

Implementation -- Not allowed in most of desert tortoise critical habitat. Biological Opinion with USFWS for sheep grazing on BLM allotments outside of desert tortoise critical habitat.

15. Wild Horses and Burros

Policy -- The Desert Plan designated specific *Herd Management Areas* (HMA) for the management of wild horses and burros and set herd management population levels for each area. There are three HMAs in the planning area: Kramer (south of Kramer Junction), Centennial (Naval Weapons Center at China Lake) and Slate Range (Naval Weapons Center at Mojave B Range).

Implementation -- All burros have been removed from the Kramer HMA. All wild horses and burros immediately surrounding the Centennial and Slate HMAs have been removed. A small herd of horses is permitted in the LCM allotment in the northern part of the planning unit. Removal of animals occurs to keep the numbers down. However, it should be noted that there is movement back into these areas.

16. Agriculture (Other than Grazing)

Urbanization, cultivated agriculture, and related uses are not permitted on BLM-administered public lands. Acreage must be transferred to private interests through sale (rare) or exchange for this purpose.

17. Wildland Fire Suppression

BLM's objective is to ensure that fires burn no more than 10 acres. Fire suppression activity in the Southern Sierras is based on using the minimum tool for suppression. Mechanized equipment is a last resort and generally hand crews with aerial drops of retardant is the norm, especially for riparian situations.

18. Residential, Commercial, Industrial

Not permitted.

19. Refuse Disposal

Policy -- Public lands managed by BLM may not be used for waste disposal purposes. Where a suitable location is found on BLM-administered public lands, consideration may be given to transfer the site to a county, state or other agency for this purpose.

Implementation -- The transfer cannot occur if the land is encumbered by any mitigation measures or controls on use. On-going mitigation such as measures to reduce food source for ravens cannot be required as a condition of transfer.

20. Disposal of Federal Land

Mesquite bosques and spring habitat are not disposed of and mudflat and marsh habitat is not targeted for disposal. Also, Category I lands will not be disposed (Guideline 26) and there will be exchange of Category I and II lands only if equal or more lands are attained (Guideline 27).

21. Military testing and Training

The BLM has a MOU with military bases to perform search and rescue missions and for a right-of-way between Manix and Ft. Irwin.

APPENDIX C
BLM GENERAL PROACTIVE PROGRAMS

VOLUNTEER ACTIVITIES

BLM recognizes the importance of volunteer services and has, since the adoption of the Desert Plan in 1980, actively supported volunteer efforts as an important component of managing the public lands in the California Desert. As an example, a number of organizations have sponsored weekend clean-up campaigns in and around popular recreation areas in the desert. In addition, several volunteer groups and local schools have been involved with annual Earth Day habitat improvement projects. There are also ACEC improvement projects. These efforts over the past seven years have significantly reduced the amount of litter and debris in these areas and have restored numerous important habitats, for the benefit of wildlife and the protection of habitat diversity. Volunteers are also involved in monitoring by gathering data on birds, tortoises and other wildlife under the direct supervision of qualified biologists.

Policy

Public Law 95-540, 1984 (the BLM Volunteers for the Public Lands Statute) authorized the Secretary of the Interior to establish and promote volunteer programs throughout the BLM.

BLM Manual 1114 establishes the policies and procedures for the program. The program is to "provide the public with the opportunity to participate in the preservation, conservation, and development of the resources of the Public Lands."

The California Desert Conservation Area Plan recognizes the importance of volunteer programs and proposes that, "projects be identified which would be appropriate for volunteer efforts for development, improvement or maintenance." The California Desert District has provided volunteer coordination with individuals and organizations to further this program through each resource area office and the district office.

The following agreements between BLM and organizations have been established specifically for the conservation of wildlife:

•Audubon Society - - to provide volunteers to monitor non-game birds and to establish wildlife viewing areas in Indian Wells Canyon and Sand Canyon ACEC. This agreement was signed in 1996 and is being implemented.

•CAP (California Environment Project) - - to work cooperatively with the Bureau to complete habitat restoration projects in the Barstow Resource Area. This agreement has been in effect since 1997.

•Desert Tortoise Preserve Committee, Inc.(DTPC) - - to cooperate with the Ridgecrest Resource Area for the management of the Desert Tortoise Natural Area to provide volunteers to patrol and repair the perimeter fence, to conduct interpretive programs, to provide a naturalist(s) at the Preserve during tortoise activity periods, and to provide volunteer support for other related activities at the Preserve. Additionally, to cooperatively acquire road easements and complete tortoise proof fencing along Harper Lake Road. This project has been in effect since 1995 and is 55-60% complete. The BLM has been working with the DTPC since the mid-70's and put together a ACEC Management Plan in 1980, with their cooperation. This was updated in 1989 and continues to call for DTPC and BLM to work together in managing the area. Members of the committee helped organize and conduct the 1997 survey of the DTNA 3-square mile Desert Tortoise Interpretive Study Plot. BLM and DTPC work cooperatively to prevent vandalism on the Pilot Knob Allotment, which is currently leased to DTPC. BLM has provided DTPC and its caretakers with various supplies to realize this goal. Rangers are patrolling the area and BLM biologists have initiated baseline tortoise surveys as part of the cooperative agreement with the DTPC.

•LACC (LA Conservation Corps) - - to work cooperatively with the Bureau to complete habitat restoration projects in the Barstow Resource Area at Afton Canyon (salt cedar removal and restoration) and Harper Dry Lake (salt cedar removal, infrastructure placement, trail building, etc.). This agreement has been in effect since 1997.

•Quail Unlimited, Inc. - - to provide funds and volunteers for one or two projects a year for restoration of habitat and construction and maintenance of habitat improvements primarily for quail and chukar (guzzlers and riparian/spring restoration). This agreement has been implemented since 1990. Members maintain between 30 and 40 guzzlers annually, ensuring that ramps into the water are clean, allowing wildlife, especially tortoises to climb back out after using the water.

•Society for the Conservation of Bighorn Sheep - - to cooperate with BLM to implement development and maintenance of habitat improvements including artificial water collectors (guzzlers), spring developments, spring enclosures, tamarisk removal, etc. This agreement has been in effect since 1993 and is being implemented.

Projects

Many volunteer projects have both direct and indirect benefits to wildlife and habitat. For example, removal of accumulated trash and debris improves wildlife habitat and reduces predators such as ravens and wild dogs. The following is a partial list of volunteer clean-up projects completed between 1989 and 1997:

•Lucerne Valley Area (1989) - - included volunteers from Southern California Edison (SCE) and California Off Road Vehicle Association (CORVA). Removed 14 abandoned vehicles.

•El Mirage Dry Lake (1990)- - included volunteers from SCE, CORVA, and California Association of 4-wheel Drive Clubs (C4WDC) and American Motorcyclist's Association (AMA). Removed 44 abandoned vehicles from the dry lake and surrounding area.

•Highway 247 and Camp Rock Road (1990) - - included volunteers from CORVA, C4WDC, and AMA. Collected 5,500 bags of trash from along these roads and from Anderson and Soggy Dry Lakes.

•Shadow Mountain area (1991) - - included volunteers from CORVA, C4WDC, and AMA. Filled three 40-cubic yard dumpsters with trash.

•Rademacher Hills (1991 to present) - - Sierra Club and Boy Scouts involved in habitat rehabilitation of the hills south of Ridgecrest.

•Dove Springs area (1993) - - included volunteers from CORVA, C4WDC, and AMA. Filled three 40-cubic yard dumpsters with trash.

•Johnson Valley (1993 and 1994) - - included SCE, AMA, and a number of local construction companies. Removed 422 tons of trash from an existing unauthorized 3- acre dump. Materials included tires, household items, brush, trees and vehicle parts. The trash was separated for recycling. The site was graded to natural contours.

•El Mirage area (1995) - - included CORVA, C4WDC, and AMA. Installed six guzzlers and planted 100 trees.

•Calico Mountains (1996) - - included CORVA, C4WDC, and AMA. Removed trash from an abandoned mine in the Calico Mountains.

•Victorville area (1997) - - included CORVA, C4WDC, and AMA. Removed trash from the abandoned Apex Mine site.

•Desert Tortoise Natural Area (1988 -1996) - - involving CORVA, C4WDC, DTPC, Desert Survivors and AMA. This involved several projects carried out over a number of years; to upgrade the parking area, to install fencing along the western boundary, to repair damaged sections of fencing, to remove Russian thistle from fence lines and to replace signs. Equestrian group replaced signs and inspected fence in areas not accessible by vehicle.

•Rand area (1990-present) - - involved CORVA and AMA in developing and implementing the Rand Plan for a route network and maintenance of the routes. The installation of the south boundary Rand fence was installed by the BLM with early assistance from prisoners and later assistance from students of the Mesquite High School and other teenagers with the JTP (Juvenile Training Program).

•Study Exclosure put up by students of Mesquite High around vegetation study east of California City. Study is looking at impacts of annual exotic grasses on fire and native vegetation in the Mojave desert.

•Quail Unlimited, High Desert Multiple Use Coalition, Boy Scouts, USFWS volunteers put in riparian exclosure at Christmas Spring in Great Falls Basin ACEC. First two groups constructed Black Rock Spring riparian exclosure as well.

•Quail Unlimited construct Middle Knob guzzlers, Steve's guzzler, Laurel Mountain Seep development, and reconstructed the Sheep Spring Development. The group generally does 2-3 major maintenance projects in the Ridgecrest Resource Area annually, along with hauling water to guzzlers when rainfall fails to fill them.

Volunteer projects also involved individuals who are not members of an organization who have contributed many hours to projects which benefit conservation of wildlife and habitat including trail maintenance, implementing special habitat plans, monitoring wildlife, cleaning up trash, and providing environmental education to children. Areas of high volunteer involvement from Audubon Society, Sierra Club, Apple Valley High School, Excelsior School, Quail Unlimited, Boy Scouts and Girl Scouts of America include Harper Dry Lake, Afton Canyon, and Juniper Flats.

APPENDIX D
SPECIAL MANAGEMENT AREAS

The following jurisdictions have made a commitment to manage lands for the long-term conservation of special status species: California Department of Parks and Recreation; CDFG; Joshua Tree National Park; and BLM. The commitment is found in management plans and policies; an overt statement of commitment to a specific species or an area's specific habitat type. California State Parks has a general policy of managing all of their lands for the protection of all plants and animals within the park area; this has been interpreted to mean that any special status species found within one of the state parks will benefit from a commitment for long-term management. CDFG has a general policy to manage Ecological Reserves and Wildlife Areas for the protection of plants and animals. Thus, there is a commitment to manage these lands for the long-term conservation of special status species. Joshua Tree National Park states in their General Management Plan the goal to preserve the land in the park for future generations. This commitment to the long-term conservation of the land is a commitment to the species that are found there. BLM manages land in many ways: ACECs; Wilderness Areas; Wilderness Study Areas; desert tortoise Categories; compensation lands; Multiple Use Classes; etc. Based on the criteria used for this planning effort only those policies and plans that are specific to a special status species or an area's habitat type that is used by a special status species qualifies as a long-term commitment. Thus, an ACEC for riparian habitat has a commitment to any species that uses that habitat type, but an ACEC for cultural resources (or only a specific species that is not a special status species) while perhaps providing some habitat for a special status species, has no overt commitment. A detailed description of what BLM management plans and actions constitute a commitment for which species is given below.

STATE PARKS

State parks are established by state law and managed for the protection of natural resources including all plants and animals within the park boundary.

Antelope Valley California Poppy Reserve:

1,750 acres. This area is classified as a reserve system. It is located 15 miles west of the City of Lancaster. It was acquired by a local foundation and dedicated in 1976. It is managed as part of the state park system for the purpose of promoting the California poppy and other wildflowers. The area is rich in wildlife. Management includes prescribed burns to encourage the poppy blooms and maintenance of a good seed bank. Areas are fenced to keep out domestic sheep. Perennial native grasses are present and expanding because of the burns.

Red Rock Canyon:

This 26,000-acre area is located in the southwestern El Paso Mountains. The area has red sandstone and volcanic cliffs. The park contains the convergence of three biological provinces - the Sierra Nevada, the Mojave Desert and the Basin Range creating a wide diversity of flora and fauna. There

are two preserves in the park; Red Cliffs Natural Preserve (520 acres) and Hagen Canyon Natural Preserve (1,400 acres). Both were created for geologic values and are managed for the conservation of tortoise habitat.

Ripley Desert Woodland:

This area was added to the State Park system in 1988. This 566-acre reserve is located west of the City of Lancaster, and five miles west of the Poppy Reserve on Lancaster Road. It represents one of the few remaining examples of native Joshua tree and juniper stands which once grew in great abundance throughout the valley. Fenced into three parcels in 1996; the northern parcel is 300 acres. A two year revegetation project has been completed to reclaim 100 acres of the northern parcel that had been cultivated up until the 1970's. Joshua tree and juniper seedlings are being planted, and roadways/trails are being decompacted, as well as straw and seed added. There is historical evidence that tortoise were found in the area. Currently there is discussion about the possible reintroduction of the tortoise. As part of the revegetation /restoration process a tortoise-proof fence may be installed.

Saddleback Butte:

This 3,336-acre park is located 20 miles east of the City of Lancaster near the community of Lake Los Angeles, in northwestern Los Angeles County. The butte rises 1,000 feet above the valley floor. The area was set aside in 1960 to conserve a representative example of the native Joshua tree woodland habitat. It had numerous tortoise sightings in the late 1980's, but tortoise are seen much less frequently now.

Table D.1 State Park Land Use Management

LAND USE ACTIVITY	ANTELOPE VALLEY POPPY PRESERVE	RED ROCK CANYON	RIPLEY DESERT WOODLAND	SADDLEBACK BUTTE
Livestock Grazing	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Mineral Development	Not Permitted	Limited to expansion area on exiting claims	Not Permitted	Not Permitted
OHV Use	Not Permitted	Permitted on designated route during certain times of the year	Not Permitted	Not Permitted
Commercial Use	Not Permitted	Not permitted	Not Permitted	Not Permitted
Overnight Camping	Not Permitted	Permitted in campgrounds	Not Permitted	Permitted in campgrounds
Hiking & Equestrian Trails	8 miles of hiking trails	73 miles of primitive road system	2 miles of hiking trail	Approx. 4 miles of hiking trails and 3 miles of equestrian trails (with tortoise safeguards).
Equestrian Groups	Not Permitted	Use primitive road system with permit	Not Permitted	Permitted on special trail by permit
Hunting/Shooting	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Roads	1 mile	73.3 mile road system	None	2.5 Miles
Visitor Center	Yes	Yes	Interpretive Kiosk	Yes

Table D.2 State Park Proactive Programs

PROACTIVE PROGRAM	ANTELOPE VALLEY POPPY PRESERVE	RED ROCK CANYON	RIPLEY DESERT WOODLAND	SADDLEBACK BUTTE
Ecological Reserve Areas within Park	None	Yes - 2	None	None
Management Plan in Effect	None	Yes	None	None
Perimeter Fencing	Fenced	Park parimeter fenced; No fencing around preserves	Fenced	DT& MGS habitat fenced
Boundary signs	Yes	Yes	Yes	Yes
Private Land Acquisition	20-acres in 1994	160 acres donated in 1995	Park created in 1990	None
Habitat Restoration	Prescribed burns	Native revegetation in preserves; riparian project.	Restoration project	None
Monitoring and surveys	None	DT log maintained	None	None
Public outreach	Information disseminated on wildlife and plants*	Information disseminated on wildlife and plants*	Information Kiosk*	Information disseminated on wildlife and plants*

* Website information available on park features.

REGIONAL COUNTY/STATE LANDS

Mojave River Floodplain Maintenance Plan (FMP)

The Mojave River segment described here extends from Mojave River Forks Dam to the Barstow area. The FMP is a flood control maintenance plan concerned with the removal of native habitat and impacts on water quality. A programmatic Biological Opinion (BO) for the FMP is in the process of being approved by USFWS to provide for the incidental take of a number of federally listed species. The mitigation and compensation measures which will be included in the BO will be substantially the same as those identified in the FMP. Final approval of the FMP and BO will result in a Regional General Permit (RGP) issued by the US Army Corp of Engineers to San Bernardino County Flood Control District for selective maintenance. This plan will replace the Interim plan (IFMP) prepared in 1993.

The plan includes three important habitat areas (termed reaches): Spring Valley Reach -- from Bear Valley Road to the Mojave Narrows (including the Mojave Narrows Regional Park, see details below); Interim Reach — from the Mojave Narrows to Oro Grande; and Silver Lakes Reach extending through

the community of Silver Lakes. Detailed discussion and maps of these reaches can be found in the FMP June 1997 report.

Goals of the Plan include:

- Avoiding habitat removal to minimize habitat loss while preventing loss of life and infrastructure;
- Ensuring no net loss of wetlands;
- Avoiding a piecemeal approach to flood control planning;
- Sustaining viable habitat throughout the river in perpetuity;
- Promoting habitat diversity;
- Minimizing impacts to water quality; and,
- Mitigating project temporal losses of habitat and implementing successful mitigation.

The mitigation measures listed in the FMP will be included in the BO and will be implemented by the San Bernardino County Flood Control District. The preferred form of mitigation is avoidance, followed by minimization of impacts. Clearing of vegetation for flood control would only be applied in developed areas or where infrastructure such as bridges would be impacted.

Flood control actions will include removal of vegetation from the main channel, and from new areas subject to new construction.

Channel maintenance — A centerline channel was created under the interim IFMP which ranges from 150 to 300 feet in width. Vegetation was removed from this channel as part of the initial flood control program and will require periodic clearance as the vegetation grows back. This will be an ongoing maintenance activity covered by the RGP.

New Construction -- Bank protection and construction of new levees will be authorized under this RGP. Impacts to riparian habitat will, in most cases, be temporary. In those cases where the impacts would not be temporary, revegetation and/or other compensation will be required.

Compensation credits for the loss of habitat may include the following measures:

Table D.3 Compensation Measures

Mitigation	**Spring Valley Reach**	**Interim Reach**	**Silver Lakes Reach**	**Afton Reach**
Removal of exotic plant species and revegetation with native plants.	X	X		X
OHV control	This will require an MOU with City of Victorville to provide information and construct barriers.			
Cowbird trapping	X	X		
Control turbidity during construction. This will be required for all maintenance activities which impact water quality.	X	X	X	

Note: for further details see FMP report, June 1997.

Mojave River Regional Park

The 850-acre Mojave Narrows Regional Park is located in the Spring Valley Reach of the FMP. Approximately 400 acres is devoted to park-related facilities, and the remaining 450 acres is devoted to maintenance of the native habitat.

The land is owned by the State of California and managed by San Bernardino County Parks and Recreation Department. The agreement between the County and the State Wildlife Conservation Board stipulates that a plan for the park will be completed by the County. No plan has been completed for the Park. The agreement also provides for hunting and the development of access roads, parking and camping areas, and other park improvements for recreation.

Park uses include overnight camping, fishing, hunting, and boarding of horses and other equestrian activities. The park provides for group camping and special events, some of which bring hundreds of people into the area for up to three days. Large "amusement park" type uses are not permitted.

Proactive management for the conservation of the natural area along the Mojave River includes signs, maintenance of nature trails, attempts to prohibit OHV activity, and reduction (trapping) of non-native cowbird populations.

CALIFORNIA DEPARTMENT OF FISH AND GAME

It is the policy of the State of California, ... "to protect threatened or endangered native plants, wildlife or aquatic or large heterogeneous natural marine gene pools for the future use of mankind through the establishment of ecological reserves." (Id. At § 1580.) Wildlife Management Areas are established by the Commission for the purpose of propagating, feeding and protecting birds, mammals and fish.

Camp Cady Wildlife Area:

The Camp Cady Wildlife Area is located about 20 miles east of Barstow along the Mojave River. It comprises 1,552-acres of mostly riparian habitat. Historically this area was one of three locations along the Mojave River that had year long surface flows. In recent years, however, increased use of ground water upstream has lowered the water table and resulted in surface flows at Camp Cady being reduced only to the cooler months of the year. There is some land away from the river bottom and it consists of relatively flat creosote scrub habitat.

Fremont Valley Ecological Reserve:

The reserve is comprised of five separate parcels totaling 1,090-acres located within the BLM Rand/Fremont Valley Management Area and within critical desert tortoise habitat. The parcels were acquired as compensation for development resulting in the loss of tortoise and MGS habitat.

Hinkley Conservation Easement:

In 1992, the Department secured a conservation easement to a 7.5 acre parcel of land located near Hinkley Road about 9 miles west of Barstow and about 1.5 miles south of Highway 58. The easement was obtained for a Pacific Gas and Electric project nearby. The land on the parcel is gently rolling and covered with creosote scrub habitat.

Indian Joe Spring Ecological Reserve:

Indian Joe Spring Ecological Reserve consists of six parcels of land totaling 546 acres. The reserve is located in an eastside canyon of the Argus Range, 4 miles north of Trona, Inyo County. The terrain found within the reserve is steep to rolling, with occasional granitic rocky outcrops. The reserve is bisected by a main canyon system, which contains about 5-10 acres of discontinuous riparian habitat, springs, and fruit trees. The site once supported a thriving orchard and vegetable gardens. The vegetation on the surrounding canyon walls and ridges is desert scrub.

The reserve was established to protect habitat for a small population of the Inyo California Towhee, a state and Federal endangered species. The most recent survey, conducted in 1995, documented successful breeding that year, with both adults and juveniles observed.

Indian Wells Valley Ecological Reserve (proposed):

This 80-acre parcel is located south of Inyokern in the Little Dixie Wash area in Mohave ground squirrel and desert tortoise habitat. These adjacent parcels were acquired as compensation for loss of habitat resulting from water infrastructure development.

King Clone Ecological Reserve:

The King Clone Ecological Reserve (KCER) consists of 488-acres of land on ten contiguous parcels. The KCER is bisected by Bessemer Mine Road, and is approximately 1/4 mile north of the junction with Highway 247. The parcels were acquired primarily to protect ancient creosote rings (*Larrea tridentata*), including the King Clone, estimated to be 11,700 years old. These cloned plants are believed to be some of the oldest in the world.

The KCER occupies relatively low, flat terrain vegetated by creosote bush scrub. Substrates are very sandy, with low gradient, shallow desert washes sheeting through portions of the area. Low wash areas are dominated by scalebroom scrub. Shrub species common to the area include creosote bush, burro bush, ephedra, matchweed and bladderpod. Yucca species occurring include Mohave yucca and Joshua tree. When rainfall is adequate, the sandy, open substrates support an array of spring native wildflowers such as desert sand verbena, desert lupine, spectacle-pod, yellow linanthus and desert allysum.

West Mojave Desert Ecological Reserve:

The West Mojave Desert Ecological Reserve (WMDER) consists of 22 separate parcels of land totaling 11,817.26 acres. All are located north of Highway 58 between Barstow and Kramer Junction. There is not a great deal of difference in habitat among the parcels. Most are very flat but some have low rolling hills. Several parcels have a few steep sided hills up to several hundred feet in height. The dominant vegetation type found in the parcels is Mojave creosote scrub. Several parcels to the west and northeast are vegetated by saltbush scrub, whereas two others to the northeast are vegetated by Joshua tree woodland.

Table D.4 CDFG Land Use Management

Land-Uses and Activities	California Department of Fish and Game Habitat Areas						
	Camp Cady Wildlife Area	**Fremont Valley Ecological Reserve**	**Hinkley Conservation Easement**	**Indian Joe Springs Ecological Reserve**	**Indian Wells Valley**	**King Clone Ecological Reserve**	**West Mojave Desert Ecological Reserves**
Cattle/Sheep/Agriculture	Cattle/sheep not allowed. Some crops cultivated for wildlife.	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Hunting	Allowed	Not allowed	At discretion of property owner	Allowed	Not allowed	Not allowed	Allowed 7/1 to 1/31
Target shooting and Plinking	Not allowed.	Not allowed.	At discretion of property owner.	Not allowed.	Not allowed.	Not allowed.	Not allowed.
Camping	No overnight camping.	No overnight camping.	No overnight camping.	Limited camping by agreement.	No overnight camping.	No overnight camping.	No overnight camping.
Horses and Burros	There are no wild horses or burros in these areas.			100% target removal of burros by BLM continues.	There are no wild horses or burros in these areas.		
Public Roads	Entrance road.	Dirt roads.	None.	2 unpaved roads on east end blocked at entrance.	Dirt roads on the north and south.	One unpaved road bisects property.	Unpaved roads.
Vehicle Access	All vehicle access limited to designated routes and parking areas.						
Recreation Activity Allowed	Recreational uses compatible with conservation of species including hiking, nature studies and other non-intrusive activities are allowed.						
Motorized Events	Competitive and non-competitive events are not allowed.						
Temporary Commercial Use	All commercial uses, including harvesting of plant materials, are not allowed.						
Utility Trans./Power Generation	Not allowed. There are no existing utility transmission lines or power generation operations in these areas.						
Mineral Development	Not allowed.						
Fire Suppression	BLM fire units will respond to and suppress wildfires in these areas.						
Urban Uses	Not allowed.						
Refuse Disposal	Not allowed.						

Table D.5 CDFG Proactive Programs

	Habitat Areas						
Current Management	**Camp Cady Wildlife Area**	**Fremont Valley Ecological Reserve**	**Hinkley Conservation Easement**	**Indian Joe Springs Ecological Reserve**	**Indian Wells Valley**	**King Clone Ecological Reserve**	**West Mojave Desert Ecological Reserve**
Area	1,552 Acres	1,690 Acres	7 Acres	520 Acres	80 Acres	488 Acres	11,817 Acres
Management Plan in Effect	Interim mgt. plan	Interim mgt. Plan	Interim mgt. plan	Interim mgt. plan	None	Interim mgt. plan	Interim mgt plan
Designation	Wildlife Area	Ecological Reserve	Easement over private property	Ecological Reserve	Proposed Ecological Reserve	Ecological Reserve	Ecological Reserve
Perimeter Fencing	Partially fenced	2 of 3 sections fenced	Fenced	Spring exclosure	Not fenced	Not fenced	One section fenced
Boundary Signs	Posted	Posted	None	Posted	None	One-half fenced	1 parcel posted
Private land Acquisitions Proposed	None	None	None	None	None	Yes	None
Habitat Restoration Proposed	See footnote 1	None required	None required	2 cleanup projects and construction of burro exclosure	None required	None	Revegetaion of closed vehicle routes
Monitoring and Surveys	None	Some small mammal & DT surveys-no systemic monitoring	None	1 bird survey	Plans to survey for DT in 1997	None	DT displacement study

1. Ponds in river will not be rebuilt due to periodic flooding. Possibly will build pond adjacent to river. Tamarisk removal ongoing. Upland game habitat will be developed. Feasibility of eventually planting crops for upland game.

JOSHUA TREE NATIONAL PARK

JTNP is committed to manage for the conservation of all native species located in the Park. The first goal in the General Management Plan is to: "Manage land and wilderness to preserve them unimpaired for future generations." (GMP at page 10.)

Table D.6 Joshua Tree National Park Land Use Management

LAND USE ACTIVITY	Joshua Tree National Park
Livestock Grazing	Not Permitted
Mineral Development	Not Permitted except on preexisting claims with plan
OHV Use	Not Permitted
Commercial Use	Filming Occurs
Overnight Camping	Permitted in campgrounds and Natural Zone
Hiking Trails	Natural Zone
Equestrian Trails	Permitted on designated trails
Hunting/Shooting	Not Permitted
Motorized Vehicle Events	Not Permitted
Wild Horse and Burros	None
Utility Transmission	Pipeline to North Entrance - under consultation
Roads	130 miles in Development Zone
Harvest of Plants	Not Permitted

Table D.7 Joshua Tree National Park Proactive Programs

Proactive programs for tortoise and other species	
Monitoring and Surveys	Prior to design or construction, surveys are performed for any listed species. Between 1991 and 1996 ten permanent trend plots were established. In 1995, 1996 and 1997 630 km of permanent monitoring transects installed.
Research	Testing new procedures for determining DT pop. distribution and size.
Land Acquisition	2.5 acres in 1995; 145 acres proposed.Wildlands Conservancy donation of 26,000 acres in 1999.
Habitat Restoration	Restoring vehicle routes no longer in use with native vegetation. Water related resources will be protected through obtaining water rights and monitoring.
Public Outreach	Educational materials provided about flora and fauna in the park.

BUREAU OF LAND MANAGEMENT

California Desert Conservation Area Plan (CDCA Plan, 1980) wildlife and habitat policies:

> 1) Manage federally and State-listed species and their habitats to comply with existing legislation and Bureau policies. In brief, the continued existence of these species will not be jeopardized by Bureau actions. Where possible and feasible, populations and habitats will be stabilized and/or improved. The overall objective will be to improve the status of such species so that delisting can occur. Management of these species and their habitats will occur through close coordination with State and other federal agencies;
>
> 2) Give certain species, designated sensitive by the BLM, special consideration and attention in the planning process because of their present condition and status. The overall objective would be to manage these species and their habitats so as to minimize the potential for federal or State listing;
>
> 3) Consider the habitat of all fish and wildlife in implementing the Plan, primarily through adherence to and development of objectives dealing with habitats and ecosystems...;
>
> 4) Manage representative habitats using a holistic approach. Each habitat will be large enough and managed in such a way as to retain viability and integrity of the natural systems;
>
> 5) Give habitats unique to the CDCA special management consideration and manage them so as to maintain their unique biological characteristics; and,
>
> 6) Manage sensitive habitats using a holistic, systems-type approach. Sensitive habitats are defined much like "sensitive species." [CDCA, 1980, page 30.]

The BLM has many management tools that result in a commitment to manage lands for the long-term conservation of animal and plant species. The following "classifications/actions" are examples of BLM commitments:

<u>Classifications/Actions That Have Created a Commitment.</u>

<u>1. Tortoise Management Categories.</u> The Desert Plan as amended (Decision Record, 1993, pg. 42) established three tortoise management Categories (I, II, III) for public land in the California Desert. These categories superceded the original crucial habitat designations in the Desert Plan. The California Statewide Desert Tortoise Management Policy (1992, pg.23) identifies a long-range goal for the management of the desert tortoise on public land in the California Desert as restoring and maintaining viable tortoise populations on Category I and II lands. A second long-range goal is to minimize impacts to tortoises in Category III through mitigation and compensation. This represents a decision that the categories created a commitment as follows:

a. **Categories I and II habitats** are <u>committed</u> to the long-term conservation of the desert tortoise, but not of any other species.

b. **Category III habitat** is not committed to the long-term conservation of the desert tortoise.

The goals of the Tortoise Management Policy (Categories I, II, and III):

Category I: Maintain stable, viable populations and protect existing tortoise habitat values.

Category II: Maintain stable, viable populations and halt further declines in tortoise habitat values.

Category III: Limit tortoise habitat and population declines to the extent possible by mitigating impacts.

2. Compensation Land Acquisitions. Project proponents are normally required to replace listed species' habitat permanently lost due to project impacts. Since compensation lands are acquired as mitigation for the conservation of a species, the acquisition of such lands represents a commitment to manage them for the long-term conservation of the species for which they were acquired.

a. **Compensation land acquisitions** managed by the BLM are committed to the long-term conservation of the species for which they were acquired. The commitment is to the amount of acreage. The acreage of the acquired parcel could be transferred to a broader area for which a commitment has been made to the long-term conservation of the target species. [Compensation land acquisitions managed by the CDFG are committed to the long-term conservation of whatever species occur there.]

3. Other Acquired Lands. Other **lands acquired for wildlife purposes**, such as habitat acquired with Land and Water Conservation Funds or Wildlife Conservation Board Funds, are committed to the long-term conservation of the species for which they were acquired.

4. Special Areas. The adoption of land/habitat management plans by the BLM is the normal mechanism to commit specific public land areas to the long-term conservation of specific species. The level of commitment is normally defined in the management plan; thus, a review of each management plan is necessary to identify the specific area and the specific species affected. The commitment of an area to the long-term conservation of one species does not necessarily commit that same area to the long-term conservation of another species even if a de facto commitment exists. The species to which an area is committed must be identified in the management plan. In addition, in some cases the actual designation decision commits specific public land areas to the long-term conservation of species (i.e. wilderness). Examples of committed areas include:

a. A portion of the **Rand-Fremont Management Area** (the Category I and II portion) is committed to the long-term conservation of the desert tortoise.

b. **Wilderness areas** in the West Mojave planning area, as created by Congress in 1994, are committed to the long-term conservation of species, recognizing prior existing rights. This flows from the following policies:

1) 43 CFR 8560.0-6: Wilderness areas shall be managed to promote, perpetuate and, where necessary, restore the wilderness character of the land and its specific values of ... wildlife habitat, natural plant communities.... a) Natural ecological succession shall be allowed to operate freely to the extent permitted by the Wilderness Act.

2) Handbook 8560-1: Wilderness will be managed to protect known populations of listed species where necessary for their perpetuation and to aid in their recovery in previously occupied habitat. Indigenous species will be conserved to prevent listings.

c. **Areas of Critical Environmental Concern** often are areas that have been committed to the long-term conservation of one or more species. The specific areas committed and the specific species to which the areas are committed are identified in the adopted management plans. The type of commitment varies by ACEC; the plans would indicate whether the areas are committed and to which species the commitment applies:

1) For habitat-based plans, the area is committed to the long-term conservation of whatever species use the target habitat type as specified in the plan.

2) For species-based plans, the area is committed to the long-term conservation of the specific species targeted in the plan.

For instance, the **Desert Tortoise Natural Area**, per its management plan (1988), is committed to the long-term conservation of the desert tortoise and any other species using that habitat because it is a habitat-based plan.

There are several ACECs that are for cultural sites or species specific (a non-special status species) within the WMPA; however, although these areas may provide de facto habitat for many of the WMPA special status species, these ACECs do not represent an overt commitment for the long-term management for the species. Examples of these ACECs are: Mojave Fishhook Cactus ACEC, Black Mountain ACEC and Creosote Rings ACEC.

Classifications/Actions That Have Not Created a Commitment.

1. Multiple-use Classes. Multiple-Use Classes do not, in and of themselves, create a commitment of BLM-managed lands to the long-term conservation of any specific species. The MUCs were not intended to do that. Commitments of specific land to the long-term conservation of specific species were established through other mechanisms such as the approval of specific land/habitat management plans.

2. Critical Habitat. The identification of critical habitat does not commit the BLM to the long-term conservation of a species. In 1994, the U.S. Fish and Wildlife Service identified critical habitat for the desert tortoise including public lands in the West Mojave planning area managed by the BLM. Critical habitat was also previously identified for the Inyo California towhee. Although all Federal agencies must insure that any action authorized by them is not likely to result in the destruction or adverse modification of the constituent elements essential to the conservation of the tortoise (50CFR17.94), critical habitat does not commit specific areas to the long-term conservation of species. Such commitment is normally made through the adoption of a land/habitat management plan (such as the West Mojave Plan) or some other adoption mechanism by the BLM.

3. Habitat Management Plan Areas. The Desert Plan identified a number of areas for which habitat management plans are to be prepared. Examples include the Newberry/ Granite raptor breeding area and the East Sierra Canyons. The identification of habitat management plan areas in the Desert Plan did not commit these areas to the long-term conservation of species. Adoption of subsequent management plans was the mechanism that created a commitment to long-term conservation of specific species.

4. Unusual Plant Assemblages. The Desert Plan identified a number of unusual plant assemblages within the West Mojave planning area. The Desert Plan specifically indicated that other mechanisms (such as ACEC designation and management plans) would be used to commit UPAs to long-term conservation (Desert Plan, pg 46 and Appendix X).

5. LTA Exchanges. Numerous land exchanges have been taking place within the Western Mojave Land Tenure Adjustment Area. These exchanges, facilitated by Air Force funding, are intended to preclude land uses not compatible with the training/testing mission of Edwards AFB, to encourage private land development in appropriate locations, and to provide for more efficient management of public lands. The acquisition of land through LTA project exchanges does not, in and of itself, create a commitment for long-term conservation of a species.

6. Special Areas (SA). The Desert Plan identified Special Area designation as a tool to highlight habitats and species known to be important for special consideration in the environmental assessment process for any kind of project. The multiple-use class guidelines for the class in which the area is located will provide the basic management direction for each Special Area. Where appropriate, activity plans will establish site-specific management directives. The Desert Plan specifically indicated that other mechanisms (such as management plans) would be used to commit SAs to long-term conservation (Desert Plan, pg 31 and 127).

7. Research Natural Areas (RNA). The Desert Plan identified RNA designation as a Special Area category that highlight a few locations where research and education would be one of the primary uses. The Desert Plan specifically indicated that other mechanisms (such as management plans) would be used to commit RNAs to long-term conservation (Desert Plan, pg 31 and 127). Pisgah Lava Flow and the Desert Tortoise Research Natural Area are examples of RNAs.

Table D.8 BLM Special Areas

SPECIAL AREAS	SIZE (ACRES)	FOCUS OF COMMITMENT	YEAR DESIGNATED	YEAR ACEC PLAN SIGNED	SIKES ACT[1]
Afton Canyon ACEC	8,160	Riparian habitat**,** raptors, Neotropical migratory birds, bats and bighorn in particular	1980	1989	Yes
Barstow Woolly Sunflower ACEC	320	Botanical resources**,** Barstow woolly sunflower in particular	1980	1982	No
Big Morongo Canyon ACEC	3,705	Riparian habitat.	1980	1982; 1998	No
Cronese Lakes ACEC	7,257	Marsh, riparian, and lacustrine habitats**.**	1980	1984	No
Desert Tortoise Research Natural Area ACEC	25,000	Desert animals and plants, Desert Tortoise in particular**.**	1980	1988	Yes
Great Falls Basin/Argus Range ACEC	8,730	Riparian habitat in general, Towhee in particular	1980	1987	Yes
Harper Dry Lake ACEC	480	Marsh habitat, for bird species in particular**.**	1980	1982	No
Jawbone/ Butterbredt ACEC	153,000	Riparian and wildlife values, Raptors and bighorn in particular	1980	1982	Yes
Rainbow Basin ACEC	19,480	Geologic features, wildlife species (desert tortoise, Prairie falcon)		1991	No
Sand Canyon ACEC	2,338	Riparian habitat and wildlife	1980	1989	No
Short Canyon ACEC	1,100	Riparian habitat**,** Plants in particular	1988	1990	No
West Rand Mountains ACEC*	29,440	Species specific, desert tortoise	1980		Yes
Argus Range Wildlife Management Plan	(most of the area is in NEMO planning area)	Species specific, bighorn.	1980	1986	Yes
Rand Mountains-Fremont Valley Management Plan	65,020	Species specific, desert tortoise		1993	Yes

[1] Signed by the Department of Fish and Game under Federal Authority of the Sikes Act.

* The West Rand Mountains ACEC was expanded and is within the Rand Mountains/Fremont Valley Management Area and is covered under the Rand Mountains/Fremont Valley Management Plan.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

The CDCA Plan states the following goals for Areas of Critical Environmental Concern:

> 1) Identify and protect the significant natural and cultural resources requiring special management attention found on the BLM-administered lands in the CDCA;
>
> 2) Provide for other uses in the designated areas, compatible with the protection and enhancement of the significant natural and cultural resources; and,
>
> 3) Systematically monitor the preservation of the significant natural and cultural resources on BLM-administered lands, and the compatibility of other allowed uses with these resources. (CDCA, 1980: 123)

1. Afton Canyon ACEC

Afton Canyon ACEC was designated primarily to protect and enhance the riparian wildlife habitat and scenic values along a section of the Mojave River where there is year-round surface flow. The ACEC contains a developed campground and has potential for high visitor use. During the past 40 years, native willows and cottonwoods were invaded by exotic tamarisk trees. Surface water flows declined, and native bird species' abundance and diversity declined. With implementation of the management plan, this trend has been reversed. With both financial and labor assistance from a wide variety of groups, large areas of tamarisk have been eliminated and willows, cottonwoods, and mesquite trees have been planted. The area attracts many riparian bird species in all seasons, but especially during spring and fall migration when the site provides a foraging area for songbirds, shorebirds, and marshbirds. The canyon walls and surrounding mountains provide nesting habitat for a variety of raptors, such as prairie falcons, golden eagles, and red-tailed hawks. The management plan needs updating to include consideration of possible Mojave tui chub reintroduction and development of Watchable Wildlife viewing facilities.

Management Goals and Actions Related to Wildlife/Habitat:

1. Improve the condition of, and maintain the extent of, riparian habitats in Afton Canyon in order to preserve in a quality condition the last Mojave River riparian habitat on federal public lands and keep it available for compatible activities.

2. Improve the condition of wildlife habitat in the planning area in order to assure healthy and stable populations of riparian-dependent wildlife, raptors, and the Cady Mountain bighorn sheep herd.

3. Provide for low-impact recreation in a manner compatible with protection of sensitive riparian values, visual resources, wildlife habitat, and visitor safety. [Plan at 8]

> A) Rehabilitate riparian zone to increase water flow by removing tamarisk and planting native plants;
>
> B) Eliminate, through fencing, cattle grazing from all areas outside of the existing allotment;
>
> C) Remove all burros; and,
>
> D) Monitor the riparian zone and bird species.

Table D.9 Afton Canyon ACEC Management Actions

Action Item	Status
1. Amend the CDCA Plan to expand Afton Canyon ACEC. This amendment will include private lands within the expanded ACEC boundary, when acquired, without further administrative action.	Completed
2. Consolidate land ownership patterns in the planning area by acquiring private lands with important resource values.	Completed
3. Reconcile all segregation within the expanded ACEC to delete duplication and modify the protective withdrawal to assure that the expanded ACEC is covered by a minerals segregation.	Initiated
4. Contrary to draft plan, motorcycles and all-terrain vehicles (ATV's) will not be prohibited in the expanded ACEC.	All vehicles restricted to routes that are designated as open. Completed
5. Designate four routes and portions of six others as open to vehicle use (specific routes identified in the Afton Canyon ACEC Plan). Designate all other vehicle routes and washes as closed to vehicle use.	Completed
6. Provide for passage of motorized vehicles along the historic Mojave Road by rerouting a portion out of the riparian area and designating the Mojave Road through Afton Canyon as open for use by all vehicles on a single, signed route only.	Completed
7. Rehabilitate all routes not signed as open for use by motorized vehicles so that they will meet at least VRM Class II standards.	Partial rehabilitation completed
8. Maintain the existing campground at its present size as a fee use overnight camping area. Designate portion of the "dry camp" area on the bench west of the present campground as a fee use group camping area as a part of the Afton Canyon Campground. Establish an equestrian campground at the northern access to the Afton Canyon area adjacent to I-15 and Afton Road. Allow camping within the planning area in designated camping areas only.	Completed
9. Expand the existing prohibition on recreational shooting within the ACEC and campground to include the expanded ACEC and dry camp. Legal hunting will be allowed in the expanded ACEC with shotguns only using non-solid projectiles outside of a 0.5 mile buffer area surrounding the campground.	Completed
10. Increase on-the-ground management (including law enforcement, educational and visitor services activities) in the planning area.	Incomplete
11. Rehabilitate the riparian zone to increase water flow by removing all tamarisk.	On-going. See below. [1]
12. Rehabilitate the riparian zone by planting areas cleared of tamarisk with native plants.	On-going See below. [2]
13. Eliminate, through fencing, cattle grazing from all areas outside of the existing allotment.	Riparian exclosure installed.
14. Develop and install informational signs to inform visitors of the opportunities and restrictions in using the planning area. Post signs detailing the limitations on vehicle access. Install a visitor entrance station (kiosk) at Interstate 15 and Afton Canyon Road. Brochures will be developed for the Afton Canyon areas detailing low-impact recreational opportunities and other resource-related topics.	Incomplete/On-going
15. Continue the volunteer campground host program at the Afton Campground.	Currently, there is no host
16. Review all BLM and non-BLM actions which may affect the quantity and quality of available water flowing through Afton Canyon. As needed, deny, protest, or appeal any action that will or may adversely impact this resource.	On-going
17. Prohibit motor vehicle events involving the elements of competition within the planning area.	Completed
18. Prohibit wood collection within the expanded ACEC.	Completed/ongoing
19. Remove all burros (estimated at 6 animals) from the planning area in order to rehabilitate the riparian zone and improve wildlife habitat.	No burro sign/sightings have occurred in the last 5 years.
20. Implement fire management prescriptions in the expanded ACEC.	Completed/on-going

[1] Rehabilitation of the treatment area has provided improved bighorn sheep access to water and forage. Approximately 200 acres of saltcedar infested riparian habitat have been controlled and another 100 acres is in varying levels of control. An additional 400 acres of riparian habitat infested with saltcedar is located downstream from this treated area, and is planned for restoration in the future. PFC rating for the treated stretch of this ACEC has improved from a non-functional condition to a functioning at risk with an upward trend condition.

2 Restoration of native riparian habitat has attracted numerous avian species to Afton Canyon. Over 7000 native cottonwood and willow trees have been planted to date.

2. Barstow Woolly Sunflower ACEC

The Barstow Woolly Sunflower ACEC is a 320 acre area designated to protect a single population of the namesake, which is a small, rare, annual plant (*Eriophyllum mohavense*). Protecting important botanical resources within this area remains the primary consideration of this plan. The area consists of gently rolling hills with small washes. The ACEC and surrounding area have been grazed irregularly by sheep until the early 1990's. A 5 acre grazing exclosure was erected about 1983 to protect one sunflower concentration area.

Management Goals and Actions Related to Wildlife/Habitat:

1. Provide protection to the rare plant, *Eriophyllum mohavense*, while providing for continued grazing opportunities and recreational opportunities on immediately adjacent lands.

2. Carefully consider the implications of other management actions for this area on *Eriophyllum mohavense* populations and habitat.

Table D.10 Barstow Woolly Sunflower ACEC Management Actions

Actions	**Status**
1. A 160 acre area within the ACEC will be fenced to exclude use by off-road motorized vehicles and grazing by domestic sheep.	Completed in 1983 (seven acres)**.**
2. Two interpretive signs will be placed along the exclosure boundary next to an existing dirt road which provides access to this site.	Completed in 1983. There have been problems with vandalism. The signs were destroyed as of 1997.
3. The commercial harvest of vegetation will be prohibited within the ACEC.	Ongoing
4. The Bureau will carefully evaluate the implications of other management actions for this area on vegetational resources. Modifications of proposed actions may be made in certain cases to avoid sensitive plant populations.	Ongoing
5. A monitoring program will be instituted to determine the effects of management actions on Eriophyllum populations and the degree of compliance with these management actions.	Ongoing

3. Big Morongo Canyon ACEC

Big Morongo Canyon ACEC originally included only the portion of the Canyon downstream from a dense cottonwood and willow woodland. In 1998, the ACEC was expanded to 29,000 acres to include the rugged mountainous area surrounding the Canyon to include more widely distributed wildlife which depend upon the Canyon, such as desert bighorn sheep. Today, San Bernardino County owns 147 acres adjacent to the ACEC; these lands are managed by BLM under cooperative agreement in conjunction with BLM lands as a part of a nature preserve. In July 1994 BLM also acquired a core area of 80 acres from The Nature Conservancy which have been managed as a part of the Preserve. The area has a preserve manager and an on-site caretaker. The area has a national reputation among birdwatchers and has a moderately high visitor use, especially in the spring. It has developed boardwalks and trails. The desert tortoise population found in the preserve is part of the Northern and Eastern Colorado Recovery Unit, and not part of the West Mojave Recovery Units.

Table D.11 Big Morongo Canyon ACEC Management Actions

Actions*	**Status**
1. Expand ACEC from 2,695 to 3,705 acres. 1998 expanded to be 29,000 acres.	The CDCA Plan was amended in 1985 and again in 1998 to expand the ACEC (29,000 acres).
2. Prohibit vehicle access through Big Morongo Canyon from the south end, except for pipeline maintenance. Construct a gate across the pipeline road in Section 10. Allow only equestrian use and foot travel through the canyon bottom.	The proposed gate was constructed in Section 10. A new gate was constructed closer to the south entrance of Big Morongo Canyon ACEC in spring 1995.
3. Prohibit vehicle access into the ACEC on slopes above the canyon bottom. Construct gates across routes entering the ACEC in Sections 23, 27, and 33.	Fences and signs to prevent vehicle use inside closed areas of the ACEC have been installed in Sections 23,27,33; ranger patrols enforce this closure.
4. Prohibit discharge of firearms except for legal take of game.	Signs have been posted; ranger patrols enforce firearm restrictions.
5. Remove tamarisk regularly from the watercourse.	Small occurrences of tamarisk are controlled on an on-going basis by BLM staff and preserve volunteers within the core preserve area; large work parties to control the downstream tamarisk thickets are being coordinated.
6. Coordinate with The Nature Conservancy, San Bernardino County Regional Parks and California Dept. of Fish and Game on cowbird and starling control in the riparian woodland to benefit least Bell's vireos.	A cowbird trap was constructed and used for several years between 1985 and 1993. A new trap has been constructed and has been in use since June 1996. Starling control will commence in July 1996.
7. Install interpretive sign and kiosk inside the northern boundary of the ACEC and an interpretive sign at the southern end of the canyon / ACEC boundary. Increase ranger patrols and visitor services personnel presence.	A sign (but not a kiosk) was installed. TNC constructed a kiosk at the upper end of the canyon. A sign at the south end of the canyon was installed, and ranger patrols have focused more attention on Big Morongo Canyon. BLM has placed a site manager on the preserve, and has stationed volunteer preserve hosts to live on site in the caretakers' residence.
8. Coordinate land use programs/objectives with the TNC and San Bernardino County Regional Parks for adjacent lands in Canyon.	BLM coordinated activities/ management goals with TNC when TNC owned/managed land within the canyon, and continues to coordinate with San Bernardino County Regional Parks about management goals and needs.
9. Determine feasibility of acquiring private land in Sections 3 and 10, T2S R4E.	These lands have been acquired by BLM.
10. Provide nest boxes for cavity-nesting birds.	Not completed; control of starlings had been presumed to help ensure availability of adequate nesting cavities for cavity-nesting species within the canyon.
11. Establish a monitoring program for wildlife and vegetation to determine effects of management actions on the ACEC. Annual reports will be submitted to the California Desert District Office.	Photo monitoring sites established in 1985 at various locations within and above the canyon. Sensitive plant species have been monitored by TNC, BLM and volunteers since 1989. Annual bird monitoring transects have been conducted by BLM staff since 1992. A breeding bird survey has been conducted annually for 18 years by San Bernardino Valley Audubon Society. Annual reports submitted to the District office in 1987/ 1988, now kept at Palm Springs Resource Area office.

* The Nature Conservancy has transfered management and lands in the Big Morongo Canyon to the BLM.

4. Cronese Lakes ACEC

Cronese Lakes ACEC was designated to protect important cultural and wildlife resource values associated with two playas and adjacent wetlands. The distribution of cultural materials is nearly continuous around these two ancient lakes. More than 35 distinct sites, including habitation sites, have been identified. In the years that the Mojave River flows, East Cronese Lake is used by large numbers of wintering and migrant birds, especially shorebirds, ducks, and pelicans. Mesquite hummocks and washes surrounding the playas are important for wildlife, especially for migrating songbirds. A major problem has been the invasion of exotic tamarisk. The area is also important for wildlife species like Mojave fringe-toed lizards that are associated with sand dunes.

Management Goals and Actions Related to Wildlife/Habitat:

1. Controlling exotic plants and reintroducing native plants as part of maintaining/enhancing marsh, riparian, and lacustrine habitats to protect/preserve floral/faunal species.
2. Maintaining water quality and volume.

A) Manage grazing - determine impacts to significant cultural and natural resources.

B) Monitor water development - recommend that the Mojave Water Agency and the Corps of Engineers give careful consideration to the potential effects of their projects on the Cronese Basin because of water-dependent wildlife and wildlife habitat.

C) Stabilize/rehabilitate/salvage features - to ensure wildlife survival/use, rehabilitate critical habitat.

D) Monitor- extent of surface water and water quality, relative levels of motorized vehicle use, and numbers of bird species during periods when water is present in the East Cronese playa basin to gauge trends in wildlife resource values. [Plan at 10-12]

Table D. 12 Cronese Lakes ACEC Management Actions

Action	**Status**
1. Identify and protect significant natural and cultural resources.	Ongoing.
2. Monitor cultural / wildlife resources.	Ongoing. Last monitoring report written in 9/93.
3. Control and sign user/ vehicle access A) designate specific routes of travel B) Post signs as needed. C) Restrict OHV use to designated routes.	A) Completed in 86 B) Initially completed in 86 C) Ongoing
4. Increase resource/law enforcement presence in ACEC.	Unknown.
5. Manage grazing use.	Ongoing. Historically, East Cronese Lake had heavy grazing use. In 1993 grazing use in area minimal.
6. Monitor water development.	Ongoing.
7. Stabilize, rehabilitate and salvage features.	Unscheduled. Tamarisk invades the area.
8. Maintenance of the areas's visual integrity.	Ongoing.
9. Develop cooperative agreement with adjacent private landowners where land exchange is unsuccessful or inappropriate.	Not initiated.

5. Desert Tortoise Research Natural Area ACEC

The Desert Tortoise Research Natural Area (DTNA) ACEC was designated to provide protection for one of the highest known, continuous densities of desert tortoise. The Mohave ground squirrel and many other species commonly found in a Mojave creosote bush community also inhabit the area. Initial management began in 1973 with a vehicle closure. In 1979 the first management plan was completed. A fence has been completed around the perimeter, leaving out two square miles. Managed lands are owned by BLM, the Department of Fish and Game, and the Desert Tortoise Preserve Committee. In recognition of the level of protective management, the DTNA was not designated critical habitat for the desert tortoise.

Management Goals and Actions Related to Wildlife/Habitat:

1. Protect, conserve, and enhance desert tortoise populations. Allow populations to fluctuate naturally. Reverse population decline.

2. Protect, conserve, and enhance populations of other desert animals and plants to preserve a representative portion of the Mojave Desert ecosystem for research and public enjoyment.

Actions - prohibit collections of animals and plants; survey representative parts of the DTNA to determine densities and status of desert kit fox populations.

3. Protect, conserve, and enhance habitat in the DTNA for native species; eliminate sources of deterioration and loss.

Actions - eliminate sheep grazing within the DTNA; eliminate unauthorized vehicle access; withdraw aprox. 50 acres; eliminate Russian thistle from the northeastern corner of the DTNA; acquire private lands within the DTNA; protect habitat near the interpretative center; protect the area from fires. [Plan at 2 -3]

4. Promote contemplative recreation and educational activities (e.g., sightseeing, nature walks, photography, hiking, etc.). Maintain recreational, scenic, and aesthetic values. Protect safety of visitors.

5. Allow appropriate research and study at the DTNA while at the same time protecting natural values.

6. Maintain an active monitoring program to determine effectiveness of management actions, status of desert tortoise populations and other species of concern, status of habitat, and the integrity of the DTNA and its boundaries.

7. Maintain continuity with desert tortoise and other animal populations in the DTNA with animal populations in other parts of the Fremont-Stoddard critical habitat.

8. Protect the DTNA from impacts that would result from development of leasable minerals and mineral material sales.

9. Continue to seek the advice and support of the Desert Tortoise Preserve Committee in implementation of the ACEC management plan.

6. Great Falls Basin / Argus Range ACEC

The Great Falls Basin / Argus Range ACEC was designated to provide protection of unique and valuable wildlife, primarily to protect habitat of the Inyo California Towhee and scenic quality. This medium-sized songbird is found in isolated pockets of willows and shrubs at numerous springs and seeps in the Argus Range in Inyo County; many of these are designated critical habitat. The restricted range and small amount of suitable habitat make this an extemely rare subspecies. The species is also found on adjacent lands in the Naval Weapons Test Center and on lands owned by the Department

of Fish and Game. Habitat has been threatened by feral burros, water diversions to residences, and recreational activities.

Management Goals and Actions Related to Wildlife/Habitat:

1. Unique and valuable wildlife and scenic resources within this ACEC will be protected and enhanced through various management actions. Other resource uses will be provided for only to the extent they are compatible with the purpose of protection and enhancement of wildlife and scenic resources.
2. Wildlife, wildlife habitat and scenic quality will be protected and enhanced on public land.

   A) Protect water sources - Surface water in the ACEC and subsurface water supporting riparian habitat are essential habitat components for wildlife in general, and especially for migratory and resident birds. Proposed critical habitat for the Inyo California Towhee centers around such features.

   B) Remove burros especially around riparian areas.

   C) Restrict camping and parking and confine vehicle use to designated routes.

   D) Designate a no-shooting zone.

   E) Remove exotic vegetation.

   F) Protect, stabilize and/or enhance wildlife resources.

Table D.13 Great Falls Basin ACEC Management Actions

Actions	Status
1. Close much of the area to motorized vehicles.	Barriers at Ruth Spring and N. Ruth Springs road, a vehicle restriction on eastern roads. Exclosure constructed at Christmas Spring.
2. Stop unrestricted camping, littering, and firearms.	No-shooting zone in primary visitor access areas (Austin Spring). Hunting for upland game birds in the fall will be allowed.
3. Remove non-functional steel pipelines, pipe-line rights-of-way and road rights-of-way.	Completed.
4. Stop unauthorized water diversions and protect water sources.	Ongoing.
5. Remove feral burros.	Several thousand removed, small remnant herd remains.
6. No oil and gas resources identified within the ACEC, exploration and potential development should be managed to avoid towhee habitat.	None proposed, no leases.
7. Exchange or purchase private lands.	A parcel of private land in Indian Joe Canyon acquired by CDFG. BLM acquired parcel at mouth of Indian Joe Canyon.
8. Establish baseline and monitor resource conditions.	Inventory /monitoring indicate little exotic vegetation, areas should continue to be monitored. Surveys for Inyo California Towhees in 1979/92. Population stable.
9. Rehabilitate scars left by off-road vehicles, remove litter, graffiti, and abandoned pipes.	Closed motorcycle trail through Ruth Spring. Fenced Christmas Spring to allow rehabilitation.
10. Increase ranger patrols in the area.	Ongoing.
11. Develop and distribute interpretive materials.	Not implemented.
12. Protective withdrawal from mineral entry for Inyo California Towhee habitat. Withdrawal prevent road construction and water diversions	Withdrawl limited to Argus Range Wilderness Area.

that would alter habitat.

7. Harper Dry Lake ACEC

Harper Dry Lake ACEC was designated to provide protection for sensitive marsh habitat which is utilized by a variety of resident and migratory bird species. The area includes sensitive wetland habitat around the southern edge of Harper Dry Lake. Additional wetlands around the periphery of the Dry Lake are planned for acquisition. Management has been tenuous because the major water supply is agricultural runoff. This source has been inconsistent and is unreliable. The Bureau is faced with the problem of providing adequate protection to a sensitive and unique wetland habitat which has no independent water supply. The area supports high populations of raptors, shorebirds, and waterfowl, especially in the winter and during migration. Mesquite bosques in the adjacent uplands support loggerhead shrikes and long-eared owls; short eared owls and northern harriers are known to nest here.

Management Goals and Actions Related to Wildlife/Habitat:

1. Maintain, in a healthy condition, sensitive and unique marsh habitat present along the western playa shoreline of Harper Dry Lake.

2. Uses which are compatible with achieving this management objective will be allowed in the ACEC.

A) Off-road vehicles and camping are prohibited adjacent to the marsh habitat.

B) Tamarisk from the marsh and drainage channels within the ACEC will be removed. Native vegetation will be planted.

C) Obtain marsh lands next to the ACEC from interested landowners.

D) Explore alternative water sources.

E) Grazing is prohibited within the ACEC.

Table D.14 Harper Dry Lake ACEC Management Actions

Actions	Status
1. Off-road vehicles and camping are prohibited immediately adjacent to marsh habitat. Signs will be posted to discourage such activities and periodic ranger patrols will be used to enforce restrictions and monitor compliance.	Completed. There has been discussion of closing the route that passes immediately adjacent to the marsh (route is located on private land so discussions/agreement with the landowner would be required). Numerous vehicles have used this route for access to the playa, and have proceeded to get stuck. Additionally, vehicles using this route appear to disturb some bird species from a major open water habitat area.
2. All tamarisk from the marsh and drainage channels within the ACEC will be located and removed.	Implementation of saltcedar control has been initiated and will be removed in 1998.
3. A land exchange program with interested landowners will be initiated to obtain lands next to the ACEC which also contain marsh habitat.	Initiated but incomplete.
4. The feasibility of utilizing existing wells or developing a new well within the ACEC as a supplemental water source for maintaining marsh habitat will be determined. If feasible, development of an alternate water source will begin during Phase Two of plan implementation. If an alternative water source cannot be developed, a cooperative agreement with adjacent agricultural operators to provide for a continued water supply will be completed.	Initiated/Incomplete.
5. Grazing by livestock is prohibited within the ACEC.	No grazing is allowed in the ACEC.
6. The feasibility of improving wildlife habitat quality by establishing cottonwood trees and willows at select points will be determined through experimental plantings.	Initiated some experimental plantings. Additional mudflat creation, marsh enhancement, snag placement and mesquite plantings are planned for this ACEC (some snags have already been placed by a Sierra Club/Boy Scout volunteer project in '97 and birds have been observed using them).

8. Jawbone/Butterbredt ACEC

The Jawbone/Butterbredt ACEC was established to protect and enhance wildlife species and habitat and Native American values. This very large ACEC includes lands in the ecotone between the Sierra Nevada Mountains, Tehachapi Mountains, and Mojave Desert. Within this area is Robbers Roost, an important raptor area. There is coniferous forest at elevations above 6,000 feet with other vegetation communities down to creosote bush scrub below 3,500 feet. A large portion (about 25?%) of the area is privately owned. Accessibility by vehicle is high and vehicular recreation has been a major conflict in the ACEC.

Management Goals and Actions Related to Wildlife/Habitat:

1. Livestock exclosures will be established in each vegetative community, including riparian habitat, to serve as controlled situations whereby the effects of grazing on wildlife habitat components can be documented. Selected springs and associated riparian habitat will be protected from livestock and trampling through fencing, piping water off-site to livestock watering troughs, etc.

2. Recommended vehicle routes and camping/parking restrictions will be developed to reduce human intrusion into essential wildlife habitat areas containing 1) wildlife water sources and riparian habitat, and 2) known raptor nesting sites. The seasonal closure at Robber's Roost for raptor protection will remain in effect. Public land along Kelso Creek supporting riparian habitat will be identified and managed for protection and enhancement of wildlife values. This habitat is extremely valuable for resident and migratory birds.

3. Determine the use of areas by bighorn sheep and the feasibility for reintroduction. Additional habitat protection and development measures may be implemented if bighorn sheep are present.

9. Rainbow Basin ACEC

The Rainbow Basin ACEC was created to protect the distinctive scenery, natural splendor, and scientific importance of the area. The ACEC is recognized for its Desert Tortoise habitat. Portions of the ACEC are also considered important raptor habitat (i.e. prairie falcons, great horned owls, barn owls and golden eagles). Intensive recreation use, largely concentrated in specific locations, had resulted in some decline in scenic value for the area. The guiding principles for management of the Rainbow Basin Natural Area is preservation of outstanding and significant values, while allowing for public use, appreciation, and study.

Management Goals and Actions Related to Wildlife/Habitat:

1. Protect and preserve significant natural values. These include the Barstovian Land Mammal Age fossil beds, the geological formations, wildlife, listed and sensitive species, scenic qualities, and the vegetation types found in the area.

2. Promote and enhance public recreation, education, and interpretation of the natural values. [ACEC plan at 10]

Table D.15 Rainbow Basin ACEC Management Actions

Actions	Status
1 a) Continue educational/ research opportunities with universities, colleges, museums, and the Desert Studies Center. b)The BLM continue to conduct an outdoor classroom in the area for elementary school students.	1a)The BRA Archeologist permits/ works with individuals/groups conducting paleontological/ geological research. b) The Outdoor Classroom Program canceled.
2. Continue operation of Owl Canyon Campground, develop an equestrian/group camping area southeast of the existing campground. The Rainbow Basin Natural Area ACEC is closed to camping, except for designated campgrounds. Continue use of a volunteer campground host to assist visitors and maintain the area.	Completed-although currently there is no host at the ACEC.
3. Designate Owl, Coon, and Fossil Canyons as hiking trails and continue their closure to motorized vehicle use.	Completed.
4a) Continue operation of the Rainbow Basin Scenic Drive as a one-way road; b) establish two interpretive hiking trails along its route; c) Designate this route as a Back Country By-way.	4a) Completed-some problems with graffiti have occurred; 4b) impractical
5. Designate all routes of travel within the Rainbow Basin planning area as open or closed to vehicle travel. No staging for the use of off-highway vehicles will be allowed in Rainbow Basin planning area.	Completed- some problems exist with illegal off-road vehicle travel, particularly motorcycles.
6. Expand existing regulations to close the Rainbow Basin planning area to all shooting, including hunting.	Completed.
7. Consolidate land ownership patterns adjacent to the ACEC by acquiring private lands with important resource values relative to management of the ACEC.	Ongoing.
8. Develop informational, interpretive, and directional signing for the area. Develop a Rainbow Basin brochure, detailing the recreational and educational opportunities of the area.	Incomplete.

10. Sand Canyon ACEC

The Sand Canyon ACEC was designated to protect the unique flora and fauna of the area. Of particular importance are the riparian habitat and the wildlife populations that utilize it. There are 2,300 acres of public lands and 80 acres owned by the Los Angeles Department of Water and Power. Nearly all of the ACEC falls within the Owens Peak Wilderness. The ACEC was proposed to be expanded to 10,000 acres, but this was not done because designated Wilderness now encompasses this acreage. Cattle use in the ACEC is highly restricted.

Management Goals and Actions Related to Wildlife/Habitat:

1. Protect the quality and quantity of instream flow of the perennial stream. - Eliminate diversion of water. Regulate livestock grazing near the perennial portion of the stream (a cattle exclosure was constructed in 1988 for a 1.2 mile portion of the stream). Construct a trough and pipeline for watering

livestock outside of the exclosure. Monitor quality of the instream flow and changes in the stream channel structure within the exclosure.

2. Protect and enhance the vegetation of the riparian habitat - Control cattle grazing with an exclosure. Monitor changes in riparian habitat within the exclosure. Develop Desired Plant Community (DPC) options for the riparian habitat. Remove invasive tamarisk within the stream channel. Designate certain areas for camping.

3. Protect and enhance the upland portions of the watershed - conduct an evaluation of the status and management needs of the Digger Pine Woodland, Great Basin Sagebrush, and Mixed Conifer Forest communities. Develop DPC specifications for the upland portion of the watershed. Determine the presence of sensitive plants.

4. Protect and enhance wildlife resources - conduct an inventory for reptiles, mammals, and birds in the winter, spring, and early summer. Assess the need for closure to shooting.

11. Short Canyon ACEC

The Short Canyon ACEC was designated to protect and interpret the high botanical resources found in the area. Of particular importance are the large numbers of plant species many of which only occur there, are at the edge of the species' range, are unusual for the area and/or are BLM sensitive species. Riparian habitats are part of the reason for the unique and varied plant communities and are also important to the wildlife populations that utilize them. [Plan at 2] Nearly all of the ACEC falls within the Owens Peak Wilderness.

Management Goals and Actions Related to Wildlife/Habitat:

1. Riparian/Botanical Values - Protect the quality and quantity of instream flow of the perennial stream. Exclude livestock from the ACEC.

2. Protect and enhance the vegetation of the riparian habitat - Evaluate current camping use and determine if the need exists to designate camping areas and establish camping rules. And study the need to reroute the foot trail away from fragile riparian sites.

3. Protect and enhance the Unusual Plant Assemblages represented in the ACEC - Determine the presence of the sensitive and/or unusual plant species that have the potential for occurring.

4. Protect and enhance wildlife resources - develop an inventory of vertebrates with the Audubon Society. Evaluate recreational shooting and hunting to determine if areas of the ACEC warrant closure.

12. Western Rand ACEC

The Western Rand ACEC was designated to ensure that measures would be taken in managing the area to protect the desert tortoise. The Rand Mountains- Fremont Valley Management Plan was developed with goals and management actions which would facilitate and enhance the original purpose of the Western Rand ACEC in protecting the desert tortoise. [Plan at 14] This action increased the acreage of the ACEC by 13,120 acres into Fremont Valley (29,440??). This resulted in additional Category I habitat being included inside the ACEC. Multiple use activities in the ACEC are restricted to provide maximum protection for the desert tortoise and its habitat. [Plan at 4] The ACEC is withdrawn from mineral entry, vehicle access is reduced by 90%, no camping, and hunting is only allowed with shotguns during fall and winter hunting seasons on Class M and L lands. See Rand Mountains- Fremont Valley Management Plan for more details.

HABITAT MANAGEMENT AREAS

Habitat Management Areas are areas with wildlife habitats and species which require intensive, active management programs. Habitat Management Plans are developed for these areas. (CDCA, page 30.)

1. Argus Range Wildlife Habitat Management Plan

The Argus Range Wildlife Habitat Management Plan area includes the eastern half of the Argus Range. The Management Area includes about 119,500 acres. Approximately 3,300 acres are owned by the State of California and 113,900 acres are federal lands administered by BLM. The Great Falls Basin ACEC is contained within the Management Area. The Great Falls Basin area is an area rich in natural habitats in terms of floral and faunal diversity.

This plan describes wildlife habitats and species existing in the Argus Range, and lists actions needed to protect and enhance habitats and populations. The principle action is the reintroduction of bighorn sheep into this range. It is believed that, because of the removal of feral burros habitat in the Argus Range is suitable for sustaining a bighorn population. The Inyo California Towhee occurs only in the Argus Range. Other species of importance include the spotted bat, riparian bird species, golden eagle, and prairie falcon.

Management Actions and Goals Related to Wildlife/Habitat:

1. Protect critical wildlife habitat from degradation caused by competing land uses.
    A. Continue to prohibit grazing in the BLM portion of the Argus Range.
    B. Acquire critical riparian habitat (Indian Joe Springs - CDFG has acquired it.)
    C. Protect water sources.
    D. Prevent unnecessary and undue degradation to wildlife resources caused by mining.
2. Improve and maintain habitat quality through the continued removal of feral burros.
    A. The BLM program of burro removal will continue, with the eventual goal of complete elimination.
3. Re-establish bighorn sheep in the Argus Range.
    A. 20 -30 animals will be released in the area.

2. Rand Mountains-Fremont Valley Management Plan

The Rand Mountains/Fremont Valley Management Area consists of approximately 65,020 acres including the Rand Mountains, Fremont Valley, and Koehn Dry Lake. The CDCA Plan (1980) designated an ACEC and a wildlife HMA within the management area. These two units are the West Rand Mountains ACEC, covering [29,440 acres] and the Western Mojave critical habitat for the desert tortoise and the Mojave ground squirrel, which covers the entire management area. [Plan, at 7]

The over-riding goal is protection and enhancement of the desert tortoise and its habitat. Other multiple use activities are prohibited or allowed to continue in ways and at reduced levels which will not adversely affect the desert tortoise population and its habitat. [Plan at 4]

Management Goals and Actions Related to Wildlife/Habitat:

1. Ensure that the habitat is managed to protect, restore, and enhance the desert tortoise population.

2. Promote recovery of vegetation and soils.

3. Manage the ecosystem of the management area which will maintain it in a condition to improve natural features and biological diversity. [Plan at 19]

There is a 74 % reduction in the miles of vehicle routes outside the ACEC and a 90 % reduction in the miles of vehicle routes inside the ACEC which has resulted in the elimination of 635 miles of roads and trails...An 18-mile fence was constructed along the southern boundary to limit vehicular access to entry points where there is a designated open route. [Plan at 4] The ACEC and an additional area in Fremont Valley covering a total of 32,590 acres will be withdrawn from mineral entry to reduce impacts on desert tortoise habitat from mining operations.[Plan at 5]

WILDERNESS AREAS

Wilderness is a Congressional designation. It is a natural preserve with outstanding opportunities for solitude and unconfined primitive experience. Wilderness is a place to enjoy where ecological, geological and other features of scientific, scenic, educational and historical value are protected and their character retained. BLM manages Wilderness under statute regulation and policy specific to Wilderness.

Table D.16 Wilderness Areas

WILDERNESS	ACREAGE
Argus Range	74,890
Bighorn Mountain	39,185
Black Mountain	13,940
Bright Star	9,520
Cleghorn Lake	33,980
Coso Range	5,520
Darwin Falls	8,600
El Paso Mountains	23,780
Golden Valley	37,700
Grass Valley	31,695
Kiavah	88,290
Newberry Mountains	22,900
Owens Peak	74,060
Rodman Mountains	27,690
Sacatar Trail	51,900
Sheephole Valley	174,800

1. Argus Range Wilderness

This wilderness is a long and narrow mountain chain along the west side of Panamint Valley. Steep mountain slopes and highly dissected canyons characterize the Argus Range. Several springs are located within this dry desert mountain range, providing water for a small population of desert bighorn sheep.

2. Black Mountain Wilderness

This wilderness area located north of Harper Dry Lake is volcanic flow and mesa with a deposit of fine-grained dune sand in the southeast corner. Golden eagles and prairie falcons are known to nest and have been seen foraging in this area.

3. Bighorn Mountains Wilderness

This wilderness includes the foothills of the San Bernardino Mountains located east of Highway 18 and south of Johnson Valley. Mule deer, mountain lion, bobcat and golden eagles make their home among the Joshua trees and yucca and stands of Jeffery pine in the remote, higher elevations. Resident and migratory birds rest along Rattlesnake Canyon Creek and several spring-fed drainages, which flow northward through the wilderness to Johnson Valley.

4.Bright Star Wilderness

This wilderness surrounds Kelso Peak and associated drainages to the north, south and east. The varied habitats of the Mojave Desert, Sierra Nevada, San Joaquin Valley and Transverse Ranges ecoregions allow for a wide diversity of wildlife. The entire wilderness is included within the BLM Jawbone-Butterbredt Area of Critical Environmental Concern.

5. Cleghorn Lakes Wilderness

This wilderness in the Bullion Mountains south of 29 Palms Marine Corps Base contains many different natural resources. The Bullion Mountains include desert bighorn sheep habitat, and desert tortoise can be found on the valley floor. Barrel cactus "gardens" and "smoke trees" inhabit some washes.

6. Coso Range Wilderness

This wilderness encompasses the northern section of the Coso Mountain Range, an area of extensive erosion revealing outstanding volcanic displays and numerous valleys and washes.

7. Darwin Falls Wilderness

The Darwin Plateau and Darwin Hills form the landscape of this wilderness. Prairie falcons occupy nesting and foraging habitats within this area.

8. El Paso Mountains Wilderness

Numerous reddish-colored buttes and dark, uplifted volcanic mesas dissected by narrow canyons distinguish this wilderness, which is six miles southwest of Ridgecrest. Wildlife includes raptors, Mohave ground squirrel and the desert tortoise.

9. Golden Valley Wilderness

This wilderness located northeast of Red Mountain with China Lake Naval Air Weapons Center to the east is surrounded on either side by two distinct mountain ranges. Golden Valley, which is known for its spectacular spring floral displays, lies between the two ranges. The ruggedness of these mountains have helped shelter the valley from human intrusion. The wilderness provides nesting and foraging habitat for raptors and for the desert tortoise and Mohave ground squirrel.

10. Grass Valley Wilderness

A series of scattered hills lie across the western portion of the area which is east of the Cuddeback Bombing Range and west of China Lake. Wildlife values in the wilderness include raptor foraging and desert tortoise and Mohave ground squirrel habitat.

11. Kiavah Wilderness

This wilderness located in the southern Sierra Nevada Mountains contains a unique mixing of several different species of plants and animals that occur within the transition zone between the Mojave Desert and Sierra Nevada Mountains. Species of note include raptors, the yellow-eared pocket mouse, a variety of lizards and a number of migrant and resident bird species. This wilderness is part of a National Cooperative Land and Wildlife Management Area and the BLM Jawbone-Butterbredt Area of Critical Environmental Concern.

12. Newberry Mountains Wilderness

This wilderness located south and southeast of the community of Newberry Springs is noted for its rugged volcanic mountains and deep, maze-like canyons. Desert bighorn sheep have historically traveled this area, and prairie falcons and golden eagles stop here to forage and nest.

13. Owens Peak Wilderness

The majority of this wilderness located 15 miles northwest of Ridgecrest is comprised of the rugged eastern face of the Sierra Nevada Mountains. The mountainous terrain has deep, winding, open and expansive canyons, many which contain springs with extensive riparian vegetation. Wildlife includes mule deer, golden eagle and prairie falcon.

14. Rodman Mountains Wilderness

This area is located 30 miles southeast of Barstow and two miles south of I-40. A lava flow bisects the wilderness from northwest to southeast, forming a sloping mesa. More than a half dozen natural water "tanks" sit within the lava flow. One of only seven core raptor breeding areas in the desert is within this wilderness, where prairie falcons and golden eagles are known to nest. The mountains are part of the historic range of the desert bighorn sheep. While sheep have not been spotted here, they have been seen in the nearby Newberry Mountains.

15. Sacatar Trail Wilderness

This wilderness located 20 miles northwest of Ridgecrest encompasses the rugged pristine eastern face of the Sierra Nevada Mountains. Several of the canyons have springs with riparian habitats of cottonwoods, willows and grasses. Wildlife within the area includes mule deer, golden eagle, prairie falcon, quail and dove.

16. Sheephole Valley Wilderness

The Sheepholes located 20 miles east of Twentynine Palms are a steep, boulder-strewn, granitic mountain mass. Bighorn sheep make their home within the Sheephole range, while the desert tortoise are found in the valleys below.

WILDERNESS STUDY AREAS

Wilderness Study Areas are lands that Congress has directed remain unimpaired for Wilderness designation until such time as Congress decides whether or not they will become Wilderness. There is a BLM interim management policy for Wilderness Study Areas. Grandfathered uses are accommodated inside Wilderness Study Areas (not in Wilderness).

Table D.17 Wilderness Study Areas

Wilderness Study Area (WSA)	Acreage (approximate)
Avawatz Mountains	61,320
Cady Mountains	84,400
Great Falls Basin	8,800
Soda Mountains	80,430
South Avawatz Mountains	23,250

Wilderness Study Areas:

1. Avawatz Mountains Wilderness Study Area

The WSA consists of the eastern portion of the Avawatz Mountains which contain many colorful eroded slopes, rugged ridges, and steep-walled, narrow canyons. Bighorn sheep are found in the area.

2. South Avawatz Mountains Wilderness Study Area

The WSA contains the southernmost extension of the Avawatz Mountains. The mountains are highly dissected and contain steep-walled narrow canyons. The eastern half of the WSA encompasses a large bajada of coarse gravel and scattered boulders criss-crossed by many graveled washes.

3.Cady Mountains Wilderness Study Area

This WSA consists of the Cady Mountains which are a low, dark series of detached ridges and several intervening valleys. Washes which bisect the ridges are broad and contain wind-deposited sand.

4. Soda Mountains Wilderness Study Area

The topography of the WSA varies from several gentle sloping bajadas to the rugged Soda Mountains. This highly eroded mountain range has jagged ridges and sharp peaks that reach 3,663 feet in elevation. Within the range are large interior valleys created by erosion. The bajadas are interlaced with washes and slope away from the mountains toward the WSA's boundaries. The West Cronese, East Cronese and Silver Dry Lakes are within the WSA.